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Mapping the Capacity of Health Promotion Interventions for Non-Communicable Diseases in Oman

Thesis submitted for the Degree of Doctor of Philosophy

Hiyam Al Riyami, MD, MA

Supervisor: Professor Saoirse Nic Gabhainn
Discipline of Health Promotion
School of Health Sciences
College of Medicine, Nursing and Health Sciences
NUI Galway

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<th>Full Form</th>
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<tr>
<td>EMR</td>
<td>Eastern Mediterranean Region</td>
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<tr>
<td>GCC</td>
<td>Gulf Country Cooperation</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HPRC</td>
<td>Health Promotion Research Centre</td>
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<td>HPCM</td>
<td>Oman Health Promotion Capacity Map</td>
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<tr>
<td>IUHPE</td>
<td>International Union of Health Promotion and Education</td>
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<tr>
<td>MOH</td>
<td>Ministry of Health</td>
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<td>NCDs</td>
<td>Non-communicable Diseases</td>
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<td>NGOs</td>
<td>Non-Governmental Organisations</td>
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<tr>
<td>SEAR</td>
<td>South East Asian Region</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNICEF</td>
<td>United Nations Children's Fund</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>WHA</td>
<td>World Health Assembly</td>
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<td>WHO</td>
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Glossary

**Academia:** Refers to educational institutions, especially those for higher education (WHO, 2013a).

**Action plan:** A scheme or course of action, which may correspond to a policy or strategy, with defined activities to accomplish an objective, and indicating who does what (type of activities and people responsible for implementation), when (timeframe), how and with what resources (WHO, 2013a).

**Advocacy:** A combination of individual and social actions designed to gain political commitment, policy support, social acceptance and system support for a particular health goal or programme (WHO, 1998).

**Capacity:** The ability to perform appropriate tasks effectively, efficiently and sustainably.

**Cancer:** A generic term for a large group of diseases that can affect any part of the body. Other terms used are malignant tumours and neoplasms (WHO, 2013a).

**Capacity in health:** Capacity of a health professional, a team, an organisation or a health system is the ability to perform defined functions effectively, efficiently and sustainably and so that the functions contribute to the mission, policies and strategic objectives of the team, organisation and the health system (Milen, 2001).

**Chronic respiratory diseases:** Diseases of the airways and other structures of the lung (WHO, 2013).

**Competencies:** A combination of the essential knowledge, abilities, skills and values necessary for the practice of health promotion (Shilton, 2001).

**Determinants of health:** The range of political, economic, social, cultural, environmental, behavioural and biological factors which determine the health status of individuals or populations (WHO, 2013a).

**Diabetes:** A disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces (WHO, 2013a).

**Early detection/screening:** Measures performed across an apparently healthy population to identify individuals who have risk factors or early stages of disease but do not yet have symptoms (WHO, 2013a).
**Evaluation:** The systematic examination and assessment of features of a programme or other intervention to produce knowledge that different stakeholders can use for a variety of purposes (Rootman, 2001).

**Earmarked taxes:** Taxes which are collected and used for a specific purpose (WHO, 2013a).

**Financing:** This refers to a transparent and sustainable source of public financing for health promotion priorities at national or subnational levels, including direct government allocations, hypothecated taxes or through social/health insurance (Catford, 2005).

**Focal point:** The person responsible for the prevention and control of chronic diseases in ministry of health or national institute (WHO, 2013a).

**GCC Countries:** The Gulf Cooperation Council is a group of six oil exporting countries—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates—which formed a regional intergovernmental political and economic union in 1981. This union aims to expand the economic ties between its members. In 2008, a common market was launched and discussions about the introduction of a single currency were started (Economic Developments in the Six GCC Countries, 2018).

**General government revenues:** The money received from taxation, and other sources, such as privatisation of government assets, to help finance expenditures (WHO, 2013).

**Global health:** Refers to the transnational impacts of globalisation upon health determinants and health problems which are the beyond the control of individual nations (Smith, Tang, & Nutbeam, 2006).

**Governance:** Governance in the health sector refers to a wide range of steering and rule-making related functions carried out by governments/decisions makers as they seek to achieve national health policy objectives that are conducive to universal health coverage (https://www.who.int/healthsystems/topics/stewardship/en/(last accessed 30 June 2019).

**Health:** A state of complete physical, mental, and social wellbeing, not merely the absence of disease or infirmity (WHO, 1946).

**Health Promotion:** The process of enabling people to increase control over and to improve their health. To reach a state of complete physical, mental and social wellbeing,
an individual or group must be able to identify and to realise aspirations, to satisfy needs, and to change or cope with the environment (WHO, 1986).

**Health Promotion capacity building**: An approach to the development of sustainable skills, organisational structures, resources and commitment to health improvement in health and other sectors to prolong and multiply health gains many times over (Hawe et al., 2001).

**Health Promotion capacity development**: The development of knowledge, skills, commitment, structures, systems and leadership to enable effective Health Promotion. It involves actions to improve health at three levels: the advancement of knowledge and skills among practitioners; the expansion of support and infrastructure for Health Promotion in organisations and the development of cohesiveness and partnerships for health in communities (Smith et al., 2006).

**Health Promotion capacity mapping**: An approach identified to measure the current status in Health Promotion capacity as a baseline for assessing progress (Mittelmark, 2006).

**Health Promotion capacity mapping conceptual framework**: A conceptual framework is a framework that links capacity related inputs, processes, outputs and outcomes to performance of a system, organisation, personal or community health (LaFond & Brown, 2003).

**Health System**: All the organisations, institutions, and resources that are devoted to producing health actions (WHO, 2000)

**Intervention**: Any measure whose purpose is to improve health or alter the course of disease (WHO, 2013a).

**Legislation**: A law or laws which have been enacted by the governing bodies in a country (WHO, 2013a).

**Leadership**: The ability and willingness of governments to improve public leadership by developing and implementing effective public health policies and by expressing qualities in leadership and strategic thinking (Aluttis et al., 2014)

**Multi-sectoral**: Agencies and organisations from the different sectors of society including government, NGOs, private-for profit and civil society (WHO, 2013a).
Multi-sectoral action for health: Actions undertaken by non-health sectors, possibly but not necessarily in collaboration with the health sector, on health or on the determinants of health or health equity.

National integrated action plan: A concerted approach to addressing a multiplicity of issues within chronic disease prevention and health promotion framework, targeting the major risk factors common to the main chronic diseases, including the integration of primary, secondary and tertiary prevention, health promotion and disease prevention programmes across sectors and disciplines (WHO, 2013a).

National protocols/guidelines/standards for chronic diseases and conditions: A recommended evidence-based course of action to prevent a chronic disease or condition, or to treat or manage a chronic disease or condition, aiming to prevent complications and improve outcomes and quality of patients (WHO, 2013a).

Non-communicable diseases (NCDs): Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors (WHO, 2017).

Non-communicable diseases prevention and control: All activities related to surveillance, prevention and management of the chronic non-communicable diseases (WHO, 2013a).

National health reporting system: The process by which a ministry of health produces annual health reports that summarise data on, e.g. national health human resources, population demographics, health expenditures and health indicators such as mortality and morbidity. Includes the process of collecting data from various health information sources, e.g. disease registries, hospital admission or discharge data (WHO, 2013a).

National survey: A fixed or unfixed time interval survey on the main chronic diseases, or major risk factors common to chronic diseases (WHO, 2013a).

Primary prevention: Measures directed toward preventing the initial occurrence of a disease or disorder (WHO, 2013a).

Programmes: A planned set of activities or procedures directed at a specific purpose (WHO, 2013a).

Policy: A specific official decision or set of decisions designed to carry out a course of action endorsed by a political body, including a set of goals, priorities and main directions
for attaining these goals. The policy document may include a strategy to give effect to the policy (WHO, 2013a).

**Risk factors associated with non-communicable diseases:** The most common are tobacco use, harmful use of alcohol, unhealthy diet and low levels of physical activity (WHO, 2013a).

**Rehabilitation:** A set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments (WHO, 2013a).

**Strategy:** A long term plan designed to achieve a particular goal (WHO, 2013a).

**Surveillance:** Systematic collection of data (through survey or registration) on risk factors, chronic diseases and their determinants for continuous analysis, interpretation and feedback (WHO, 2013a).

**Unit or department:** A unit or department with responsibility for NCD prevention and control in a ministry of health or national institute (WHO, 2013a).
Praise be to God most Gracious and most Merciful for enabling me to complete this work. I am deeply grateful to Professor Saoirse Nic Gabhainn and Dr. Lisa Pursell for their central role and valuable guidance throughout this research. Without their support, this work would have never seen the light of day. I would also like to express my gratitude to Professor Margaret Barry for her advice to undertake this study. Without her guidance, this study would never have been conducted as an innovative capacity-mapping study. It is a pleasure to express my deepest and sincerest gratitude to Dr. Jane Sixsmith, Dr. Diarmuid O'Donovan, Dr. Michal Molcho, Eric Van Lente, Dr. Samir Mahmood and Dr. Khalifa Alusharafi for their masterly teaching and intellectual stimulation which have underpinned this work and for their valuable advice and kindness.

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Last but not least, I convey the very best of my feelings to all the Omani people who participated in this study.
DEDICATION

I dedicate this study to my husband Dr. Mahmood AL-Hajiry and my children (Fatma, Marwa, Laura, Hajar and Omar) who were always so patient and understanding in my hours of distress. Words would never be able to express my profound gratitude.
Abstract

Non-communicable diseases (NCDs) are medical conditions or diseases that are, by definition, non-infectious and non-transmissible between people (Kim & Oh, 2013). NCDs are chronic diseases because of their long duration and slow progression. They affect people of all ages, nationalities and classes. The four main types of NCDs that form the focus of this research are cardiovascular diseases, diabetes, cancer and chronic respiratory diseases (WHO, 2015b). These four groups of diseases alone account for over 85% of all NCD-related deaths and NCDs cause 71% of deaths around the world, killing 41 million people each year (WHO, 2018). In Oman, 72% of deaths are caused by NCDs (WHO, 2018). The development of Health Promotion capacity is fundamental to strengthen and sustain action in relation to NCDs.

This study aimed to examine and map the existing capacity for Health Promotion in the context of NCDs in Oman. The study explored what is needed to enhance the capacity to prevent NCDs in Oman in terms of Health Promotion policy and practice. The study employed a sequential explanatory mixed-methods approach to achieve these objectives, using both quantitative and qualitative approaches. Health Promotion capacity in Oman was mapped with an adapted version of the capacity-mapping tool for Health Promotion developed by the World Health Organization (WHO EMRO, 2010). This tool is based on eight Health Promotion capacity domains: policies and plans pertaining to Health Promotion, core of expertise in Health Promotion, collaboration, programme delivery, partnership, professional development, information systems and financing. The key informants for the mapping tool were purposively selected government, non-government and private employees involved in Health Promotion-related actions in Oman. Semi-structured interviews were conducted with ten high-level national and regional Health Promotion experts who have the power to implement Health Promotion policies. These data were analysed through thematic template analysis, which revealed an understanding of the experts’ knowledge, perceptions and views of the Health Promotion capacity map and the gaps in capacity identified in the mapping study.
The quantitative analyses revealed low scores in four of the Health Promotion capacity domains—policies and plans, collaboration, partnership and professional development—and even lower scores in the domains of programme delivery, information systems and financing. Participant recommendations to improve these domains included developing a department or unit of Health Promotion, improving collaboration and partnerships and finding dedicated sources of funding.

The findings from both sets of analyses led to recommendations for both the government of Oman, especially the Oman Ministry of Health, and non-governmental sectors involved in NCD-related Health Promotion activities. These included that there should be government-mandated partnerships between relevant sectors, and that the NCD-related Health Promotion policies and plans should be governed and overseen by a higher government entity. It is necessary first to build effective mandated multi-sectoral strategic collaborations and partnerships among all relevant sectors. These two actions will help improve the remaining six NCD-related Health Promotion capacity domains in Oman. Thus, Health Promotion interventions for NCDs in Oman should move beyond the Ministry of Health to include other sectors that are involved in Health Promotion and NCD prevention. The process of building Health Promotion capacity for the prevention of NCDs is everyone’s responsibility.

Keywords: Health Promotion, capacity-mapping, non-communicable diseases, Oman.
1. Introduction

1.1. Background
Non-communicable diseases (NCDs) remain a global public health crisis worldwide, and there is ample evidence to suggest that the burden of NCDs is already having a profound effect on the health of populations in epidemiological transition such as Oman and Gulf Cooperation Council Countries in the Middle East (EMRO) region (WHO, 2016a). The number of worldwide deaths from NCDs is projected to increase from 38 million in 2012 to 52 million by 2030 (WHO, 2014). Mortality and morbidity associated with NCDs were 40.5 million out of 56.9 million global deaths in 2016 (WHO, 2016b), and they account for seven of the top ten causes of death globally, causing almost 71% of all deaths. Furthermore, every year, NCDs kill 15 million people between the ages of 30 and 70. All of the above indicates the need to explore how to address NCDs effectively (WHO, 2018a).

Much of this is preventable by changing the management of NCDs from a focus only on treatment to more effective, efficient and sustainable Health Promotion strategic interventions (WHO, 2001, 2010, 2014, 2017, 2018; Catford, 2005; Aluttis et al., 2014; Hunter et al., 2019; McQueen, 2013; van den Broucke, 2017; Marmot & Bell, 2019), starting by building Health Promotion capacities (Catford, 2005; Aluttis et al., 2014). Unhealthy lifestyle risk factors are the most common causes of NCDs, presenting in the form of unhealthy diets, physical inactivity, the consumption of tobacco and the harmful use of alcohol (WHO, 2016c). Children, adults and the elderly are all vulnerable to these risky behaviours. Broader risk factors, such as rapid unplanned urbanisation, the globalisation of unhealthy lifestyles and the ageing population, also affect countries worldwide, including Oman. This indicates the need to develop Health Promotion capacities that can tackle risk factors for NCDs in all age groups, nationalities and social classes (WHO, 2018a).

In Oman, the transition in the burden of NCDs means that NCDs are the leading cause of premature mortality, killing 18% of Omanis between 30 and 70 (WHO, 2018a). More than half (66.6%) of all Omanis are now overweight or obese (MOH, 2017). One in four Omani
adults have high blood pressure (MOH, 2017). The prevalence of diabetes has increased by almost 50% since 1991 (from 8.3% to 14.5%). This is not only devastating from a human point of view but also has a harmful socioeconomic impact on the individual, on families and on the country, in terms of the costs of treating people with chronic diseases and in terms of lost productivity (MOH, 2014, 2015). Few studies have been conducted worldwide, including in Oman, to assess NCD-related capacities (WHO, 2001, Joffres et al., 2004, 2010b, 2014a, 2018a), while other studies have been conducted to assess Health Promotion capacities (WHO, 2005, 2010a). There has, however, been no Health Promotion capacity-mapping project specifically focused on NCDs for any country (McQueen, 2013). This research aims to map the Health Promotion capacity interventions for NCDs in Oman.

1.2. Research Objectives

I. To examine the level of Health Promotion knowledge, skills, commitment, systems, structures and leadership that exists in Oman to determine those interventions that promote health, including policies and organisational and community-level strategies, and those that are integrated into the existing structures for preventing NCDs in Oman.

II. To determine gaps where further Health Promotion capacity is required to prevent and control NCDs in Oman.

III. To identify recommendations for strengthening existing government support for Health Promotion capacity directed at preventing and controlling NCDs.

In the following sections, the country profile of Oman with regard to Health Promotion and NCDs is outlined, with a focus on the existing situation and issues related to Health Promotion capacity-mapping regarding NCDs in Oman. At the end of the introduction, the structure of the thesis will be presented.

1.3. Oman Country Profile

1.3.1. Geographic overview

A map of the Sultanate of Oman (henceforth, Oman) is provided in Figure 1 below, showing the eleven governorates, each of which has some independent authority with
regard to managing health services. Oman is an Arab country its official religion is Islam and Arabic is the national language. It is located in the south-eastern part of the Arabian Peninsula in Western Asia. The coastline extends 3,165 km from the Strait of Hormuz in the north to the borders of the Republic of Yemen in the south, overlooking the Arabian Gulf, Gulf of Oman and the Arabian Sea.

The Sultanate is composed of varying topographic areas consisting of plains, wadis (dry riverbeds) and mountains that render access to health services costly. The largest city, and capital, is Muscat. The climate differs from one area to another; it is hot and humid in the coastal areas in summer and hot and dry in the interior, with the exception of the high mountains and Dhofar Governorate, which enjoy a moderate climate throughout the year.

![Map of Oman](image)

*Figure 1. Map of Oman (Ministry of Health, 2017).*
1.3.2. Economic environment

Table 1 below presents key economic indicators for Oman from 2016.

Table 1. Oman economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Oman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy at birth (in years) (^a)</td>
<td>76.9 (M 74.7; F 79.3)</td>
</tr>
<tr>
<td>60 years and above (^a)</td>
<td>5.9%</td>
</tr>
<tr>
<td>Ministry of Health (MOH) expenditures (Millions) (^a) €</td>
<td>1,789.32</td>
</tr>
<tr>
<td>GDP per capita (^a) €</td>
<td>13,002.28</td>
</tr>
<tr>
<td>GNI per capita (^a) €</td>
<td>14,385.37</td>
</tr>
<tr>
<td>MOH expenditure (Millions) (^a) €</td>
<td>1,789.32</td>
</tr>
<tr>
<td>MOH expenditure (% of all governmental) (^a)</td>
<td>6.4%</td>
</tr>
<tr>
<td>Total MOH expenditure per capita (^a) €</td>
<td>416.8</td>
</tr>
<tr>
<td>Health insurance (^a)</td>
<td>N/A Free health service for Omani citizens</td>
</tr>
</tbody>
</table>

\(^a\)Source: National Annual Health Report (MOH, 2016)

Omani life expectancy (76.9 years) is lower than that of the European Union overall (81.0) (World Bank, n.d.). The Omani health expenditure per GDP percentage (6.4%) is lower than that in European countries (between 5% in Romania (lowest) and 11.5% in France (highest)) (Eurostat, 2016). The Omani health expenditure per capita (€416.8) is at the low range of health expenditures per capita in Europe in 2016. European expenditures range from €400 per capita in Romania (lowest) to €5,600 per capita in France (highest) (Eurostat, 2016).

1.3.3. Health system in Oman

The Ministry of Health (MOH) is the main health care provider in Oman and is charged with building a modern national system that offers all Omani citizens universally accessible health services free of charge all over the country. A Royal Decree was issued to establish the MOH in August 1970. The MOH develops five-year health development plans that form a part of the country’s overall development plan. The first five-year plan
was developed in 1976. Table 2 below shows the phases of the five-year health development plan in Oman from 1976 to date.

**Table 2. Phases of the five-year health development plan in Oman, 1970 to date**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Years</th>
<th>Planned Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>First phase: first, second, and third plans</td>
<td>1976–1990</td>
<td>Building the infrastructure of the health sector, resulting in the achievement of the initial health, economic and social goals of improvement of health indicators and reduction in mortality and morbidity.</td>
</tr>
<tr>
<td>Second phase: fourth, fifth, and sixth plans</td>
<td>1991–2005</td>
<td>Problem-based management plans (each programme directed to the reduction of one health or health-related problem from the priority list of problems in the sultanate). Health services decentralised and regionalised.</td>
</tr>
<tr>
<td>Third phase: seventh and eighth plans</td>
<td>2006–2015</td>
<td>Strategic planning and management coverage of the entire population group and health needs of the three levels of the country (national, regional and provincial). The seventh and the eighth five-year plans for health development, each with a mission, 12 visions and goals, and 35 domains and strategies.</td>
</tr>
<tr>
<td>Fourth phase: ninth plan</td>
<td>2016–2020</td>
<td>Result-based management and planning. It includes 18 Directorate Generals, seven directorates and four health centres. The plan included a mission, 28 visions and goals and 138 activities. In addition, the plan has guidelines for staff members to evaluate their activities.</td>
</tr>
</tbody>
</table>

**1.3.4. Organisation of health care in Oman**

The Sultanate of Oman is administratively divided into eleven Governorates with 61 municipalities (wilayats) or districts. Health services are given free in Oman to all Omani citizens. In addition, all expatriates working in the Government sector are given free access to health services in Oman, while other expatriates working in the private sector are given health insurance by their sponsors. All primary, secondary and tertiary health care, including that provided by other governmental and non-governmental bodies, deliver health care and health education through health educators and nutritionists, in addition to physicians who are trained in the schools of medicine to increase the health literacy of patients.

Health indicators in Oman have improved dramatically as follows: Life expectancy at birth has increased from 49.3 years in 1970 to 74.7 for males and 79.3 for females in 2016. Maternal mortality rate has decreased from 22 in 100,000 live births in 1995 to 13.4 in
100,000 in 2016. The total fertility rate (live births per woman 15-49 years) was 4 in 2016 (Oman Annual Health Report, MOH 2016). Population and vital indicators are presented in Table 3, taken from the Oman Annual Health Report (2016).

Table 3. Important health indicators in Oman

<table>
<thead>
<tr>
<th>Health indicators in Oman</th>
<th>Population (2016) in millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>4,414</td>
</tr>
<tr>
<td>Omani nationals</td>
<td>2,428</td>
</tr>
<tr>
<td>Omani population sex ratio</td>
<td>102 M per 100 F</td>
</tr>
<tr>
<td>Non-Omani individuals</td>
<td>1,986</td>
</tr>
<tr>
<td>% less than 5 years</td>
<td>14.9%</td>
</tr>
<tr>
<td>% less than 15 years</td>
<td>36.1%</td>
</tr>
<tr>
<td>Infant mortality rate (per 1000 live births)</td>
<td>9.2</td>
</tr>
<tr>
<td>Total fertility rate</td>
<td>4.0</td>
</tr>
<tr>
<td>Maternal mortality rate (per 100,000 live births)</td>
<td>13.4</td>
</tr>
</tbody>
</table>

1.3.5. Non-communicable diseases and behavioural lifestyle in Oman

Non-communicable diseases are the major cause of morbidity and mortality globally and in Oman (Oman, 2018). Overall, NCD-related deaths in 2018 increased to 72% of total deaths (WHO, 2018a). The trends for the four NCDS are as follows: Cardiovascular disease caused 49% of total deaths in Oman in 2010 (WHO, 2011). This decreased to 33% in 2012 (WHO, 2014a), but increased again to 36% of in 2016 (WHO, 2018a). Cancer rates have remained relatively constant: 2010 (11%); 2012 (10%) and 2016 (11%) (WHO, 2011, 2014a, 2018a). Meanwhile, diabetes accounted for 7% of the total deaths in Oman during 2010 (WHO, 2011), which increased to 10% in 2012 (WHO, 2014a) and decreased to 8% in 2016 (WHO, 2018a). Chronic respiratory diseases accounted for 3% of the total deaths in Oman during 2010 (WHO, 2011), decreased to 2% in 2012 (WHO, 2014a), and remained the same in 2016 (WHO, 2018a). The health effects of NCDs have led to a growth in morbidity and mortality rates in the country that requires urgent Health Promotion action (MOH, 2015).
In little more than a generation, urbanisation and rising personal wealth has prompted the Omani population to reject active outdoor lifestyles and adopt unhealthy eating habits. This has triggered an explosion of chronic diseases such as cardiovascular diseases, diabetes, cancer and chronic respiratory diseases. Physical inactivity has become a growing concern since large numbers of people are living sedentary lifestyles. National Oman survey in 2000 showed that 61% of adults were not doing any physical activity; and that number reduced to 37% in 2008 and remains low at 38.3% in 2017, which indicates that insufficient physical activity is also prevalent in Oman.

The world health survey in 2008 noted the frequency of insufficient intake of fruits and vegetables (less than 5 servings of fruits/vegetables per one typical day) was 69.8% (WHS, 2008) this percentage was little improved in 2017 in which the percentage of the frequency of insufficient intake of fruits and vegetables was 62.6% (Oman STEPS Survey, 2017; DGP&S, 2017). In Oman in 2008 the prevalence of smokers was 14.7% which was an increase from 10.7% in 2000. Smoking rates have improved to 7.1% 2017. In 2008 2% reported alcohol consumption and this has reduced to 0.4% (Directorate General of P&S, 2017).

The Directorate General of Planning and Studies (DGP&S, 2017) reports on the situation in Oman with respect to risk factors for NCDs, revealing that 25.2% always or often add salt or salty sauce to their food while eating. More than 66.6% of all Omanis are now overweight or obese, and the percentage with high total cholesterol is 34.5%. One in four Omani adults have high blood pressure, and the prevalence of diabetes has increased by almost 50% since 1991 (from 8.3% to 14.5%).

1.4. Health Promotion in Oman

In light of emerging evidence about epidemiological changes in Oman (e.g., from communicable to non-communicable diseases), the MOH has prioritised the need to address NCDs in the health system as part of its strategic health vision 2050 (DGP&S, 2014) by: i) including health in all policies (Ministry of Health, 2015; WHO, 2013a), ii) addressing social determinants of health (WHO, 2008b; Ministry of Health, 2015; Ministry
of Health, 2015b), and iii) addressing other health-promoting approaches, such as capacity-mapping for Health Promotion (WHO, 2015).

What is known about Health Promotion in Oman is limited, in part, because the term ‘Health Promotion’ is not commonly used to describe activities to promote health in Oman (Health Promotion generally refers to health education in Oman). The following sections discuss the history of Health Promotion in Oman, and the infrastructure, interventions and activities that could be considered as related to Health Promotion in the country.

1.4.1. History of Health Promotion in Oman

The concept of Health Promotion capacity was introduced in Oman during the ProLEAD training sponsored by WHO in 2003 (Health Education Department, 2005). ProLEAD is a capacity-building programme funded by the WHO Centre for Health Development (the WHO Kobe Centre) and WHO Eastern Mediterranean Regional Office (EMRO) for teams of leaders from countries focused on specific projects for sustainable infrastructure and financing for promoting health in their counties. ProLEAD promoted multi-regional capacity-building initiatives in support of Health Promotion. ProLEAD first started in the Western Pacific Region in 2003 and expanded to the Eastern Mediterranean Region with the selection of two countries, Oman and Lebanon.

Three staff from the Omani MOH attended the first leadership training on Health Promotion (ProLEAD I) in Switzerland in 2003. The team returned to Oman and started working on the ProLEAD project to implement Health Promotion in Oman (Health Education Department, 2007). The ProLEAD team worked on spreading the culture of Health Promotion and raising the awareness of this holistic approach. They also started the groundwork for the establishment of a structure for Health Promotion (Health Education Department, 2007). In sharing this training and Health Promotion implementation experience with the six Gulf Country Cooperation (GCC) countries, the team hosted Health Promotion training in May 2007. There were ten participants from different ministries, including the researcher. A ProLEAD team of three then conducted a second Health Promotion module in Bahrain in October 2007 and a third in the Republic
of Yemen. These Health Promotion meetings have continued in GCC countries annually to date.

The ProLEAD Health Promotion Legislation Analysis project (ProLEAD II; MOH, 2009) was conducted in Oman in 2007 by a multi-sectoral team from different ministries in Oman. The goal was to examine the existence of Health Promotion-related laws in the country. Findings of the legislative analysis project showed that legislation impacting health is voluminous and multi-sectored, Health Promotion legislation cannot be consolidated in a single act/law, and several factors inhibit effective implementation of Health Promotion legislation. Four of these factors are: i) that Health Promotion is not considered a priority in the MOH therefore establishment of multi-sectoral Health Promotion is a challenge, ii) there is a lack of trained and committed human resources in most agencies/departments/ministries, iii) there is no statutory body/foundation responsible for Health Promotion in the country, and iv) the current inter-departmental coordination efforts have not been institutionalised widely. At the end of the project, the ProLEAD team concluded that there was a need to mandate multi-sectoral task groups through a national multi-sectoral Health Promotion body coupled with advocacy to turn legislation into action.

The next official change in Oman’s approach to Health Promotion occurred in 2012. ‘Health Vision 2050’ was Oman’s effort to visualise how the Omani health system should be up to the year 2050. In the process of reviewing the existing health system, national and international experts, as well as members of the Omani public, highlighted that ‘Health Promotion is of extreme importance’ (MOH, 2015, p. 149). This is reflected in the Oman Vision 2050 Synopsis of Strategic Studies (2015), where one of the chapters focuses on Health Promotion. This sets out the vision, mission and nine strategic objectives for Health Promotion in Oman. Objective eight is to monitor and evaluate Health Promotion initiatives, services and policies in Oman. It is towards meeting that objective that this thesis aims to make a contribution.

1.4.2. Health Promotion initiatives in Oman

Since 1970 and after the blessed Omani Renaissance, His Majesty Sultan Qaboos Bin Said the former president of Oman has always emphasized the importance of health in social
and economic development. From the beginning, the Government made a commitment to develop a modern welfare state, including promotion of health of the Omani people. A Royal Decree was issued to establish the Ministry of Health (MOH) in August 1970. Since then, the MOH was able to build from scratch a modern national system that offers all Omani citizens universally accessible health services free of charge.

Based on health situation during that time and believing that health promotion programs such as health education are effective strategies aiming to save Omani nation lives from the most preventable diseases which depend on hygiene and to tackle other communicable diseases which are prevalent. Moreover, there was an urgent need for increasing health awareness among the community about hygiene and safe source of clean water. Therefore, Ministry of Health in 1973 established a health education unit.

Health Education became an integral part of all health services and programs since it plays a prominent role not only at dissemination of health information to the community but also in informing the citizens about the programs and services offered by the ministry of health in order for them to take advantage of these services.

However, many of health education activities take the form of awareness campaigns and disseminating information to promote healthy behavior and change the attitude. However, these are useful but not at all enough and sufficient to achieve behavioral change.

Prevention initiatives have been implemented for many years by other ministries with the intention of improving the quality of life of the Omani population, these efforts were not coordinated and some lack sound planning and monitoring for effectiveness.

Examples of such health promotion initiatives which has been established by the Ministry of Health and various other ministries:

The Municipality Month initiative has been in place since 1985 and encourages municipalities throughout the country to implement innovative community and social development projects.
The Baby Friendly Initiative has been in place since 1992. Approximately 3,000 volunteers were trained to promote breastfeeding and birth spacing. Today these volunteers also encourage healthy lifestyles and participate in community-based initiatives.

The fortification of flour with iron and folic acid was started in 1997 as a collaboration of the Ministry of Health, Ministry of Commerce, WHO and UNICEF. Under this program white flour is enhanced with 60mg/kg of electrolytic iron and 1.5 to 2mg/kg of folic acid. Subsequently and in expansion to tackle micronutrient deficiencies, salt was fortified with iodine and cooking-oil was fortified with vitamin A.

Community support groups (CSGs) are groups of volunteers who work as links between the community and the health system to promote health. CSGs were established in 1992 as one of mechanisms in the community health development and showed a great example of community participation in the progress of their own health. Community support groups are one of the most significant tools to spread knowledge and awareness on health-related issues in the community. Their roles can be summarized as: Health promoters, Data collectors and Social mobilizers.

Today there are around 3000 volunteers spread across the Sultanate of Oman. During the early years the movement was not always recognized and appreciated, particularly since many volunteers were young women. However, over the years, they have established themselves as an important part of the primary health care network in Oman based in the primary health care centres. Therefore, the Ministry of Health showed special attention and interest in these volunteering groups by providing various mechanisms and methods to provide appropriate capacity building and guidance for these volunteers.

Willayat health committees and projects based on community participation: Since 1990 Ministry of Health implemented immense developmental efforts and decentralization was a symbol for this development. This was started with the decentralization of the regional and Willayate authorities. MOH developed a planning culture in the system; the managerial process for national health planning was introduced in the eighties to develop
the national five years plan. The Willayate problem solving approach was also adopted in
the early nineties to develop yearly plans at Willayate and regional levels between the
five years. With the establishment of WHC in 1999 it was considered as a single
respondent of the collaboration with other sectors because its members include
government intersectoral representatives, civil societies, and the community. What adds
to its importance is that it is headed by the Wali of the province, and the committee is
assigned by the director or supervisor of health services in the province. The Willayate
Health Committees (WHC) approach was accompanied by the introduction of the
community-based projects competition which is one of the major achievements planned
and implemented by WHC. These projects were based on the WTPS approach. The MOH
took successive steps in the sustainability of these projects through a yearly award for the
best community-based project.

Nizwa Healthy Lifestyle Project (NHLP): Oman is one the few countries in the region that
has begun adopting health promoting initiatives. The Ministry of Health in Oman has
recognized the growing importance of NCDs and the change in lifestyle of the population.
So in the late Nineties Oman started with the World Health Organization (WHO) the
discussions about the country adopting the community based initiatives (CBIs). The
Willayat of Nizwa in Dakhliyah Governorate in Oman seized this opportunity and
approved to host one of the CBIs as a pilot project to promote healthy lifestyles among
the community in Nizwa. Nizwa Healthy Lifestyle Project (NHLP) was established based on
international projects on non-communicable diseases.

In 2004 the Ministry of Health and the Ministry of Education initiated Health Promoting
Schools (HPS) in Oman. The project was piloted in nineteen randomly selected schools
and has now been expanded increased to 219 schools throughout the country.

Establishment of the Non-Government Organizations: The Ministry of social development
encourages the establishment of social associations and institutions and the important
role they play in the community. Omani women are active through 51 women’s
associations, which are closely involved in women and family issues and operate a range
of education and training programmes and provide support services that help improve
the economic and educational conditions of Omani women and their families. The first Oman Women Association was established in Muscat in 1972. The Sultanate’s 19 professional associations also come under the Ministry’s aegis. Each association – which includes members of a single profession such as engineers, doctors, social workers, economists, accountants, writers, journalists, lawyers etc., which aimed to improve the professional and cultural ability of its members and serve the public by putting its members’ expertise at the community’s disposal.

Oman is one the few countries in the region that has begun adopting health promoting initiatives in the workplace. In 2008 a document titled Regulation of Occupational Safety and Health for Establishments Governed by the Labour Law was issued by Ministerial decision. The regulation provides guidelines on health care for workers and on health promotion in the workplace. Examples of specific topics include the promotion of healthy eating, physical activity and mental health in the workplace, the protection of women’s reproductive health, and the banning of smoking in the workplace. This regulation is considered to be the first at the national level to include health promotion.

An independent Authority for Consumer Protection was established by Royal Decree In February 2011. It is the first of its kind in the Arab world that regulates the market. Such was a significant indication of the Royal attention from His Majesty the Sultan for consumer protection in the Sultanate, as the consumer is seen a factor in the economic process and hence consumer rights should be kept and be protected against unacceptable commercial practices.

The national committee for road safety was established in 1997 to contribute to enhancing road safety, in an effort to reduce the rate of accidents, deaths and injuries. This was followed by establishing a road safety institute as an effort of the government, private sector, and individuals to enhance the Omani society and develop its capabilities and knowledge in order to achieve social safety.

In 2019 health promotions interventions were implemented such as standards applied on salt. stating the upper limit of salt in bread. As well as introducing 100% taxation on
tobacco products, 50% taxation on soft drinks and 100% taxation on energy drinks. In 2020, an 100% taxation on sugar sweetened beverages had been introduced.

A list of Health Promotion activities implemented by the MOH over the years is given in Table 4 below.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Health Promotion activity or intervention (year of establishment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Health Education Unit established (1973)</td>
</tr>
<tr>
<td>2</td>
<td>Municipality Month Initiative introduced (1985)</td>
</tr>
<tr>
<td>3</td>
<td>Legislation on tobacco control (1990)</td>
</tr>
<tr>
<td>4</td>
<td>Community Support Groups (CSGs) established (1992)</td>
</tr>
<tr>
<td>5</td>
<td>Birth Spacing Programme introduced (1994)</td>
</tr>
<tr>
<td>6</td>
<td>Healthy Lifestyle Project in Wilayat Nizwa established (1994)</td>
</tr>
<tr>
<td>7</td>
<td>Wadi Ma’awil Healthy Wilayat established (1994)</td>
</tr>
<tr>
<td>8</td>
<td>Department of Health Education established (1995)</td>
</tr>
<tr>
<td>10</td>
<td>Fortification of flour with iron and folate introduced (1997)</td>
</tr>
<tr>
<td>11</td>
<td>Healthy City and Villages introduced (2002)</td>
</tr>
<tr>
<td>12</td>
<td>Healthy Lifestyle Project in Wilayat Nizwa established (1999)</td>
</tr>
<tr>
<td>13</td>
<td>Non-Communicable disease Department established (2003)</td>
</tr>
<tr>
<td>15</td>
<td>National Health Education Committee established (2004)</td>
</tr>
<tr>
<td>16</td>
<td>Health Promoting Schools (HPS) introduced (2004)</td>
</tr>
<tr>
<td>17</td>
<td>Health Education Committees at GCC level introduced (2004)</td>
</tr>
<tr>
<td>18</td>
<td>Community Based Initiation Department established (2006)</td>
</tr>
<tr>
<td>19</td>
<td>Wilayat Health Teams established (2006)</td>
</tr>
<tr>
<td>21</td>
<td>Adolescent Health Strategy (2006)</td>
</tr>
<tr>
<td>22</td>
<td>ProLEAD II training sponsored by WHO (2007)</td>
</tr>
<tr>
<td>24</td>
<td>3075 community volunteers trained on health issues (2012)</td>
</tr>
<tr>
<td>25</td>
<td>Health Promotion strategy proposals: in 2006 and another strategy in 2009 and 2014 ‘A Healthier Oman’ but none of them were approved</td>
</tr>
</tbody>
</table>
1.4.2.1. SWOT analysis of Health Promotion in Oman

A brief analysis of the strengths, weakness, opportunities and threats (SWOT) of the potential of Health Promotion to prevent NCDs in Oman was undertaken in 2015 (MOH, 2015). This analysis was conducted by MOH, by assembling a team of experts to develop the SWOT analysis. The objective was to contribute to the development of Oman vision 2050 strategies that aiming at improving the services to prevent NCDs. No information was provided on the specific method used to develop the analysis. The findings of the SWOT analysis are outlined in Table 5 below.

**Table 5. SWOT analysis of Health Promotion capacity for preventing NCDs in Oman**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong political commitment</td>
<td>Lack of awareness of Health Promotion concepts and approaches in Oman</td>
</tr>
<tr>
<td>Existence of health programmes (e.g., NCD programmes)</td>
<td>There is no comprehensive documentation of all Health Promotion for NCD-related interventions and activities</td>
</tr>
<tr>
<td>Availability of public health experts that could carry out Health Promotion activities to prevent NCDs</td>
<td>Limited Health Promotion research in the area of Health Promotion interventions for NCDs.</td>
</tr>
<tr>
<td>Five-year health development plan of MOH for health programmes that include NCDs and health education and community initiative programmes</td>
<td>Limited resources for Health Promotion intervention to prevent NCDs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support of international organisations for Health Promotion intervention and activities in Oman (WHO, UNICEF, UNFPA)</td>
<td>Limited number of trained personnel in MOH and other sectors working on Health Promotion and NCDs</td>
</tr>
<tr>
<td>New vision of 2050 aims to improve Health Promotion activities to tackle NCDs</td>
<td>Globalisation and urbanisation</td>
</tr>
<tr>
<td>Collaboration between national and international sectors and organisations to implement Health Promotion activities</td>
<td>Changes in the economic status of the country</td>
</tr>
<tr>
<td>Highly qualified Public Health staff with PhD in different specialities</td>
<td>Lack of human resources</td>
</tr>
</tbody>
</table>
1.4.3. Health Promotion infrastructure in Oman

The MOH started to plan and build Health Promotion infrastructure in 2012 following the launch of Vision 2050 (DGP&S, 2012; 2015). The infrastructure of Health Promotion at the national level consists of six Directorates General (DG): i) the DG of Primary Health Care, ii) the DG of Planning and Studies, iii) the DG of Disease Control, iv) the DG of Human Resources Development, v) the DG of Information Technology, and vi) the DG of Health Services and Governorates. Only the DGs of Primary Health Care and of Planning and Studies will be discussed below as they are the most directly relevant to Health Promotion development for NCDs.

1.4.3.1. Directorate general of primary health care

In Oman, Primary Health Care (PHC) is considered to be the first and essential entrance to all other health care levels (secondary and tertiary). PHC provides numerous Health Promotion services to the community such as Health Education. PHC consists of 1,371 health centres distributed all over Oman, with at least one health centre in each local area with 10,000 people (Oman Annual Health Report, 2016). In 2015, The Directorate General of PHC was established, bringing together Departments such as PHC, Health Education and Community Initiatives.

The general services provided by the DG of Primary Health Care are as follows: i) general supervision and evaluation on a regular basis of the performance of PHC institutions, ii) work on the development of therapeutic, preventive, promotive and rehabilitative services to achieve the objectives of primary health care, iii) pharmaceuticals and services relevant to the needs of primary health care institutions in all Governorates. There are several departments (also called units) included in The Directorate General of PHC. The departments related to this research are described below.

1.4.3.1.1. Department of Primary Health Care Supportive Services

The roles of the Department are to: i) treat and follow up with patients with NCDs and provide health education, ii) ensure the implementation of the required standards and reporting to the authorities, iii) support and follow up on all aspects of the Department’s management of the primary health care institutions, iv) periodically evaluate the Primary
Health Care centres and poly-clinics (PHCs), v) support the prevention and control of infections associated with primary health care institutions in coordination with the relevant Departments of the Ministry, and vi) generally monitor and supervise the performance of all primary health care institutions (e.g., health centres).

1.4.3.1.2. The Department of Non-Communicable Diseases (NCDs)
The NCD Department was established in 2003 under the DG of Health Affairs. The aim was to integrate public health policies to control NCDs and promote care for patients with NCDs in Oman. The five-year health development plan for NCD prevention started during the fifth five-year plan (1996-2000), and was focused on the reduction of diabetes mellitus, diseases of the heart and circulation, malignant tumours and chronic kidney diseases. This plan used a problem-solving methodology. There were objectives to be achieved through education, legislation, development of manuals of treatment of NCDs, provision of secondary and tertiary care, improving manpower, laboratory equipment and drugs, registry format (to register the number of patients with NCDs), follow-up of both diabetes and cancer, and training, research and studies.

The sixth five-year health development plan (2001-2005) followed the same objectives and method of management as the fifth plan—both promoted a problem-based management planning methodology—while the seventh and eighth plans promoted a strategic planning methodology in which mission, vision, goals, objectives and strategies were planned and achieved by the end of each five-year plan. The vision of these plans was the alleviation of risks threatening public health, with the goal of reducing morbidity and mortality due to diseases and injuries to the lowest international rates. The objectives of the NCD domain in the Eighth National Health Development Plan in Oman (2010-2015) were to: i) reduce the prevalence rates of risk factors leading to NCDs, ii) diagnose NCDs early, iii) expand the role of PHC in the treatment of NCDs, iv) reinforce good control over NCDs, v) improve health care provided for patients with cancer, vi) reduce complications resulting from NCDs, vii) apply quality assurance standards in all NCD control programmes, and viii) improve baseline data and conduct studies on preventive and curative aspects of NCDs.
The responsibilities of the NCD Department laid out in the new infrastructure of MOH (2014) were: i) developing programmes and policies to control diabetes, cardiovascular diseases, cancers, chronic kidney diseases and other specific NCDs, ii) developing and maintaining an epidemiological surveillance system for the priority diseases through national registries and publishing the reports periodically, iii) collaborating with non-governmental organisations and community supportive groups to control NCDs, iv) developing and implementing programmes to promote mental health and evaluation of these programmes, v) providing therapeutic and rehabilitative care in the field of mental health, especially for addicts, in Oman, and vi) providing disability programmes and policies in cooperation with the various sectors that would improve the services provided in this area.

1.4.3.1.3. Department of School and University Health

The Department of School and University Health was established in 1991 and provides care to the school community to promote the health of school-age children and the health of the community through schools. The roles of the department are to: i) prepare policies and strategies to ensure preventive, curative and promotive health care for school age children and adolescents, ii) prepare and monitor the Health Promoting School initiative in collaboration with the Ministry of Education, iii) integrate health concepts in the school curriculum in liaison with the Ministry of Education, and iv) conduct surveys to measure the knowledge, attitudes and practices of students in schools and higher education institutions.

1.4.3.1.4. Department of Nutrition

The Department of Nutrition was established in 2000 and has a Community Nutrition section, responsible for: i) programmes related to prevention and management of malnutrition among infants and young children, ii) the social marketing of child nutrition and micronutrients, as part of a programme to control nutritional anaemia, iii) the establishment and promotion of food-based dietary guidelines for a healthy diet and to combat obesity, and iv) quality assurance of PHC related to nutrition clinics.
1.4.3.1.5. Department of Health Education and Awareness Programmes

In the new infrastructure of the MOH, the name of this Department changed from ‘Health Education and Communication’ to ‘Health Education and Awareness Programmes’ in 2015. The new department has responsibilities to: i) implement and spread awareness through various media, ii) develop an annual health education plan of action for the department’s programmes (which includes providing education to other departments and for specific priorities, on specific issues and at local and global health events, iii) provide experts for health programmes on television, radio and newspapers representing the health education department and all other departments and health institutions, iv) follow up the implementation of programmes as planned, v) provide media coverage during all national and global health celebrations, and vi) provide advanced health information programmes using media spaces allocated to health and clips showing flash movies.

1.4.3.1.6. Community-based initiatives Department

The Community-based Initiative Department (CBI) was established in 2006. The Department consists of three sections: i) community-based initiatives, ii) community health activities, and iii) community management training. The responsibilities of the CBI in the new infrastructure of MOH are: i) implementation of health activities, ii) training and qualifications of national teams in health community management, iii) developing guidelines for the implementation of community-based initiatives, iv) collaboration and partnership to achieve community-based initiatives (CBI) goals, and iv) responsibility for developing training for the Community Supportive Groups (CSGs) that were established in 1992 to link the health system and the community.

The departmental strategy is accomplished through three main activities: i) establishment of healthy cities and healthy villages, such as Nizwa healthy lifestyles project in 1999, Sur Healthy City in 2002, Qalhat Healthy Village in 2002, Healthy villages and neighbourhoods in Muscat 2004, Sohar Healthy City in 2006, and Salalah Healthy City in 2007, and eleven other healthy villages and one lifestyle project, ii) active inter-sectoral collaboration and partnership through the Wilayat health committees, and iii) empowering CSGs. Alongside those activities, the department provides technical support to projects related to community participation managed by Wilayat health committees and CSGs and works
with national and international organisations to review, consult and benchmark its activities nationally and internationally. The Wilayat (Provincial) Health Committees (WHCs), developed under the Ministerial Order 33/1999, aim to collaborate with the community and the government sectors as a sponsor of health projects and activities related to prevention and control of NCDs and related behavioural risk factors. These health committees have already contributed effectively to the planning, implementing and tracking of health issues to find best solutions (MOH, 2006). The work of the Department is achieved through collaboration with the public and private sectors, international organisations and private institutions and associations.

The Department has conducted only one Lifestyle intervention project, the ‘Nizwa Healthy lifestyle project 2010 (NHLP)’ in collaboration with WHO. In the late 1990s, The MOH in Oman recognised the growing importance of NCDs and the changes in lifestyles among the population and began discussions with the World Health Organization (WHO) about the country adopting the Community-Based Initiatives CBIs. The Wilayat of Nizwa seized this opportunity and hosted one of the CBIs as a pilot project to promote healthy lifestyles among the community in Nizwa. The NHLP was based on international projects on NCDs. A baseline survey in 2001 showed significantly high prevalence of diabetes, hypertension, hypercholesterolemia, and impaired glucose tolerance. Risk factors were also prevalent in the community, such as obesity, physical inactivity, use of animal and saturated fats and smoking. A strategic plan was developed with the participation of various partners and was implemented from March 2004, focusing on four areas: promoting physical activity, healthy diets, tobacco control, and preventing road traffic injuries. Evaluation of the project was carried out between March 2009 and August 2010 and demonstrated that the project succeeded in instilling new ideas within the community. Furthermore, it has had an impact beyond the initial objectives since it now acts as a reference point for all kinds of community-supported projects. Overall, 71.7% of participants recognised the importance of reducing fat and sugar in food compared to 23.0% in 2001 with a marked change in peoples’ perception of inactivity as a risk factor for NCDs from 6.9% in 2001 to 93.0% in 2010. The results also showed an increase in the consumption of olive oil from 7.3% to 45.3%, despite the persistent use of animal fats in the community. In addition, results showed improved physical activity during leisure time
(71.3% in 2010 compared to 38.9% in 2001) and a significant decrease in the level of tobacco use from 9.6% to 5.3% for males and remaining at 0% for females (Nizwa Healthy Lifestyle Project Evaluation Report, 2010).

1.4.3.2. The Directorate General of planning and studies (DGP&S)
The DGP&S is a key pillar of the MOH and is affiliated to the Secretariat of Planning Affairs. The DGP&S is the cornerstone of the MOH in issues pertinent to the strategic planning of health care delivery and service provision. It encompasses several directorates and sections that deal with planning; research, surveys and studies; health information and statistics; and monitoring, follow-up and evaluation.

1.4.3.3. Health Promotion at regional (Governorate) and provincial (Wilayat) levels
All the above DGs and Departments have a section with regional and provisional respondents to carry out Health Promotion programmes and activities planned by the headquarters of the Department. The decentralisation of the MOH in Oman gives the governorates and wilayats the authority to plan and carry out Health Promotion interventions depending on local need.

1.5. Interventions for NCD prevention and control in Oman
There are many MOH-led Health Promotion interventions and activities for the prevention of NCDs. These are presented in Table 6 below.
Table 6. Health Promotion interventions to prevent NCDs in Oman

<table>
<thead>
<tr>
<th>Activity Number</th>
<th>Interventions to prevent NCDs in Oman (with year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Five-year strategic health development plans working on prevention and Health Promotion of NCDs (since 1976)</td>
</tr>
<tr>
<td>2</td>
<td>Mandatory cancer notifications (Ministerial Decision 4/2001)</td>
</tr>
<tr>
<td>4</td>
<td>GCC Health Committee established (2003)</td>
</tr>
<tr>
<td>5</td>
<td>National Oncology Centre in Royal Hospital established (2004)</td>
</tr>
<tr>
<td>6</td>
<td>National Health Education Committee of Gulf plan for promoting healthy lifestyle and preventing NCDs in 2004 (Ministerial order number 93/2004)</td>
</tr>
<tr>
<td>7</td>
<td>Provision of dietetics clinics and health education clinics in each health centre and hospital (2005)</td>
</tr>
<tr>
<td>8</td>
<td>Introduction of tobacco control (2005)</td>
</tr>
<tr>
<td>9</td>
<td>Establishment of the Departments of Health Education and Community-based Initiatives 2006 in (Ministerial order number 122/2006)</td>
</tr>
<tr>
<td>10</td>
<td>Legislation banning smoking in public places (2007)</td>
</tr>
<tr>
<td>11</td>
<td>NCD prevention early screening programme ‘Screening at 40 years of age programme’ (2008)</td>
</tr>
<tr>
<td>12</td>
<td>New administrative cabinet in the MOH planned Vision 2050 aimed at preventing NCDs and their risk factors in (2010)</td>
</tr>
<tr>
<td>13</td>
<td>Podiatric clinic established in each hospital for diabetic foot care in Oman (2010)</td>
</tr>
<tr>
<td>14</td>
<td>Cardiovascular diseases and Cardiac Rehabilitation exercises department in Royal Hospital (2010)</td>
</tr>
<tr>
<td>15</td>
<td>Guideline assessment for common risk factors such as tobacco use, physical inactivity, consumption of alcohol and the excessive use of analgesic medications (2010)</td>
</tr>
<tr>
<td>17</td>
<td>Establishment of Anti-Tobacco National Committee (2010)</td>
</tr>
<tr>
<td>18</td>
<td>Provision of correct messages on healthy diet including the healthy food plate (2010)</td>
</tr>
<tr>
<td>19</td>
<td>Introduction of cigarette health warning and labelling specifications (2012)</td>
</tr>
<tr>
<td>20</td>
<td>Development of GCC (GCC-Stat) official source of data, information and statistics of GCC countries in Oman which collect data including health data of NCDs (2014)</td>
</tr>
<tr>
<td>21</td>
<td>Mandate of the National Multi-sectoral committee for prevention and control of NCDs (2015)</td>
</tr>
<tr>
<td>22</td>
<td>Mandate of the National Policy for the prevention and control of NCDs (2016)</td>
</tr>
<tr>
<td>24</td>
<td>Introduction of interventions for unhealthy foods (salt, sugar, palm oil) to be replaced with healthier ones (2017)</td>
</tr>
</tbody>
</table>
In Oman diseases such as malaria, tuberculosis and trachoma, and polio have become rare after successful vaccination programmes. Oman has seen a decline in mortality from communicable diseases due to recent rapid socio-economic development, improvement in sanitation and health services with the development of its economy and the growth of personal wealth, there have been changes in the life style of the population. Recent modernisation has led to changing nutritional habits and a decrease in habitual physical exercise. Non-Communicable Diseases have emerged as a dominant factor contributing to ill-health in Oman.

The emergence of non-communicable diseases is reflected in increased out-patient visits and in-patient admission to health institutions. WHO (2010) estimated that NCDs account for nearly 83% of total deaths in Oman which alarmed the health policy makers to shift their greatest concern and health services towards treating and preventing and controlling the non-communicable diseases.

Many health promotion legislative initiatives have been developed. Work on tobacco control was initiated at the beginning of 1990 by Muscat municipality and then by the ministry of health. Regulation was initiated by individual ministries banning smoking at work, and then spread to all other government organisations followed by some from the private sectors. Later on the GCC committee initiated tobacco committees, which led on activities that were very helpful for tobacco control. For example tobacco prices were increased by 100%, tar and nicotine levels were reduced, a ban of tobacco advertisements on television, radio and sports events was introduced, and all the airline banned tobacco in planes and at airports. Moreover, Oman was one of the first countries to ban shisha however the coffee shops took the municipality to court and the ban was reverted.

Oman has a National Policy for the prevention and control of NCDs and their risk factors (Ministry of Health, 2016). In 2015 the work on Mandate of the National Multi-sectoral committee for prevention and control of NCDs was developed by the under Chair of the Undersecretary of Planning. Multi-sectoral interventions to execute the plan included:
i) reviewing the National legislation policy for NCDs prevention to suggest evidence-based approaches to improvement

ii) developing programmes that improve knowledge about NCDs and ways to control them

iii) developing technical teams for budget allocation

iv) encouraging initiatives from community associations and organisations for NCD prevention

v) supporting research relevant to NCDs

vi) integrating healthy lifestyle curriculums in schools, and using social media to educate community about NCDs.

Omani health policy makers and leaders developed The National Policy for the prevention and control of NCDs 2015-2025 as an expression of the government of Oman commitment to healthy lifestyles and prevention of diseases. The aims of the National Policy for the prevention and control of Non-communicable diseases are as follows: i) to prevent NCDs ii) to enable health systems to respond more effectively to the health care needs of people with NCDs, iii) to provide clear guidance in six strategic areas to reduce the burden of NCDs and improve quality of life for the people of Oman, iv) to influence public policies in sectors outside health that tackle shared risk factors, v) to respond to the WHO commitment to attain the 9 global NCDs targets by 2025 through the national policy for prevention and control NCDs in Oman (2015-2025), vi) to use the NCDs policy as a platform for all stakeholders and partners to identify the role and shared contribution and commitments to accelerate actions in the prevention of NCDs, and vii) to benefit the social and economic development and the health system in Oman.

The National Policy for the prevention and control of Non-communicable diseases is based on the strategic goals which outlined in the Health Vision 2050 as well as other international and regional strategies and landmark initiatives. This policy document was developed in collaboration with the National Committee for NCD prevention through consultations with relevant national non-health sectors such as private sector and NGOs and other regional partners.
1.6. Non-Communicable Diseases

Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes (WHO, 2018, p.1).

This research concerns non-communicable diseases therefore a definition of non-communicable diseases will be mentioned. Non-communicable diseases (NCDs) are defined as “a medical condition or disease that is by definition non-infectious and non-transmissible among people” (Kim & Oh, 2013).

A weakness of this definition is that it does not explain that non-communicable diseases are chronic diseases, therefore I will add to this definition using the WHO non-communicable diseases fact sheet (WHO, 2018, p. 1) which gives a definition for NCDs which refers to chronic diseases:

“Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. People of all age groups, regions and countries are affected by NCDs.”

Non-communicable diseases are diseases that need sustained Health Promotion management and programmes. It is also important that the definition refers to non-infectious diseases which imply that the management is beyond medical treatment but involves Health Promotion action (i.e., Kim & Oh, 2013). Therefore, a new definition of NCDs was created for this project using the definitions of Kim and Oh (2013, p. 165) and WHO (2018b, p. 1): Non-communicable diseases (NCDs) are chronic medical conditions or diseases that are non-infectious and non-transmissible among people. Such NCDs are caused by a combination of genetic, physiological, environmental and behavioural factors. They affect all age groups, regions, and countries.
The WHO projects the total annual number of deaths from non-communicable diseases to increase to 55 million by 2030 (WHO, 2014a) and has declared NCDs to be prevalent diseases in both developing and developed countries (WHO, 2010b). The pandemic of NCDs has affected wealthy nations since at least World War II and is now looming in developing nations, especially in urbanised and more westernised subpopulations (Mendis, 2010; WHO, 2011; Abdul Rahim et al., 2014). NCDs are one of the major health and developmental challenges of the twenty-first century in terms of the socioeconomic impact on countries (WHO, 2015b). The four main types of NCDs are cardiovascular diseases (e.g., heart attacks and stroke), cancers, diabetes and chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma). These four groups of diseases alone account for 85% of all deaths by NCDs, with almost three quarters of deaths occurring in low- and middle-income countries (WHO, 2017b). Mortality from NCDs increases with age (WHO, 2017a), and men have a higher probability of dying from NCDs than women (WHO, 2018a).

WHO (2013c) developed a Global Action Plan for the prevention and control of NCDs (2013-2020). This plan focused on reducing premature mortality from NCDs by 25% by 2025 (also known as the 25x25 target). The plan includes six objectives, which are related directly to strengthening the national capacity for management and control of NCDs: i) prioritise NCDs, ii) strengthen national capacity, iii) reduce risk factors, iv) strengthen health systems, v) support research and development, and vi) monitor trends and determinants of NCDs (WHO, 2013c). The nine targets arising from the Global Action Plan are presented in Table 7 below:
Table 7. Targets of the Global Action Plan for the prevention and control of NCDs

<table>
<thead>
<tr>
<th>Targets of the Global Action Plan (adapted from WHO, 2013c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases.</td>
</tr>
<tr>
<td>2. At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context.</td>
</tr>
<tr>
<td>3. At least 10% relative reduction in the prevalence of insufficient physical inactivity.</td>
</tr>
<tr>
<td>4. 30% relative reduction in mean population intake of salt/sodium.</td>
</tr>
<tr>
<td>5. 30% relative reduction in the prevalence of tobacco use in persons aged 15+ years.</td>
</tr>
<tr>
<td>6. 25% reduction in the prevalence of raised blood pressure, or containing the prevalence of raised blood pressure, according to national circumstances.</td>
</tr>
<tr>
<td>7. Halt the rise in diabetes and obesity.</td>
</tr>
<tr>
<td>8. At least 50% of eligible people to receive drug therapy and counselling (including glycaemic control) to prevent heart attack and strokes.</td>
</tr>
<tr>
<td>9. 80% availability of affordable basic technologies and essential medicines, including generics, required to treat major non-communicable diseases in both public and private facilities.</td>
</tr>
</tbody>
</table>

Clearly, actions to achieve these objectives and targets (WHO, 2103c) are required, but we need to first map the Health Promotion capacity for the prevention of NCDs to monitor and evaluate what capacity already exists and to assess the gaps in this capacity. This is required in order to prioritise the interventions and ensure that these are planned strategically and efficiently without wasting resources and efforts on interventions that are not required (Catford, 2005; LaFond et al., 2002; LaFond & Brown, 2003; WHO, 2001, 2010a, 2013, 2018a).

1.6.1. The burden of NCDs

1.6.1.1. Worldwide burden of NCDs and across the six WHO regions

According to a World Economic Forum report, NCDs will cost approximately US$30 trillion globally by the year 2030 (Garcia de Quevedo, 2016). In the twenty-first century, the global burden and threat of NCDs represent a major challenge for economic development. The most recent WHO report providing NCD-related country profiles (2018a) shows that the likelihood of NCD-related premature mortality (i.e., between 30 and 69) is the highest in the Eastern Mediterranean Region (24%), which includes Oman,
followed by South-east Asia (23%) and Africa (22%), compared with lower figures in the European Region (17%), the Western Pacific (16%) and the Americas (15%). Premature mortality has an effect on productivity and economy of these regions (WHO, 2018a).

1.6.1.2. Socioeconomic impacts of NCDs

NCDs are not only a health problem but also a development challenge because many people are forced into poverty due to catastrophic expenditures related to treatment. NCDs also have a large impact on productivity (WHO, 2014a; 2018a). Vulnerable and socially disadvantaged people become sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services. During 2011-2025, the cumulative economic losses due to NCDs in the low- and middle-income countries have been estimated to be US$7 trillion. Globally, the annual cost of implementing a set of high-impact interventions to reduce the burden of NCDs is US$11.2 billion (WHO, 2014a). NCDs threaten progress towards the UN Millennium Development Goals and the post-2015 development agenda. Despite the enormous global burden of NCDs and the need for urgent health-promoting actions (McQueen, 2013; Marmot et al., 2008), so far, there has been little effective action taken against them (McQueen, 2013; Marmot 2019; WHO, 2011, 2014a, 2018).

1.6.1.3 The burden and trend of NCDs in EMRO and the GCC countries

This thesis focuses on Oman, which is located in the Eastern Mediterranean region and is one of the six Gulf Cooperation Countries (GCC) that have a high degree of cultural, socioeconomic, environmental and political similarity. This section will therefore focus on the trends in NCDs across the GCC region.

Mortality due to NCDs accounts for over 60% of the regional disease burden in the Eastern Mediterranean (WHO, 2018a). The GCC countries have the highest prevalence of hypertension, obesity and diabetes worldwide. The leading causes of mortality in these countries include cardiovascular diseases and diabetes (Abdul Rahim et al., 2014; Al-Bahlani & Mabry, 2014; International Diabetes Federation, 2011a; WHO, 2018).
The relevant disease burden within the GCC region is as follows: in Oman, the number of NCD deaths as a percentage of total deaths increased from 68% in 2012 (WHO, 2014a) to 72% in 2016 (WHO, 2018a), accounting for 18% of premature deaths in both years. In the UAE, NCD deaths increased from 65% in 2012 (WHO, 2014a) to 77% in 2016 (WHO, 2018a), accounting for 17% of premature deaths in 2016. In Saudi Arabia, NCD deaths decreased from 78% in 2012 (WHO, 2014a) to 73% in 2016 (WHO, 2018a), accounting for 16% of premature deaths in 2016. Meanwhile, in Bahrain, NCD deaths increased from 78% in 2012 (WHO, 2014a) to 83% in 2016 (WHO, 2018a) accounting for 11% of premature deaths in 2016. In Kuwait, NCD deaths remained relatively constant, from 73% in 2012 (WHO, 2014a) to 72% in 2016 (WHO, 2018a), accounting for 17% of premature deaths in 2016. Lastly, in Qatar, NCD deaths remained at the same level (69% of total deaths and 15% of premature deaths) in both 2012 and 2016 (WHO, 2014a, 2018a) (see Figure 2, below). Data from WHO (2014a) and (2018a) are combined in Figure 2 below.

Figure 2. Deaths due to non-communicable diseases in GCC countries

1.6.2. Four non-communicable diseases

1.6.2.1. Cardiovascular diseases

In 2016, CVD deaths increased to 17.9 million, which represents 31% of all global deaths and 44% of all NCD deaths, and CVD is projected to kill 23.6 million people annually by 2030 (WHO, 2018). The risk factors for CVDs include age, sex (men are at greater risk than
women of heart disease), family history, metabolic factors (hypertension, diabetes, obesity and dyslipidaemia) and behavioural risk factors, which include unhealthy diets, physical inactivity, tobacco use and harmful use of alcohol (Aikins & Agyemang, 2015). People who have a high cardiovascular risk (due to the presence of one or more risk factors such as hypertension, diabetes, hyperlipidaemia or an already-established disease) need early detection and management using counselling and medicines as appropriate (WHO, 2016). Intermediate risk factors include increased blood pressure, blood glucose and blood lipids, overweight and/or obesity. These factors can be measured in primary care facilities and can indicate an increased risk of developing a heart attack, stroke, heart failure and other complications (WHO, 2010).

The guidelines of the European Society of Cardiology on cardiovascular disease (CVD) prevention advise on how to reduce the CVD risk in the population. These include activities to encourage a healthy lifestyle and CVD risk factor reduction in the entire population. The guidelines emphasise that CVD behavioural risk estimation and counselling need regular follow-up (Marchal, Van’t Hof & Hollander, 2018).

The determinants of CVDs, or ‘the causes of the causes’ (WHO, 2016b, Marmot, 2019), are the processes of social, economic and cultural change, such as globalisation, urbanisation and ageing populations (Aikins & Agyemang, 2015). Other determinants of CVDs include poverty, which can be addressed and managed by including Health Promotion interventions to improve access to a healthy environment, employment, education and health services (Marmot, 2019; WHO, 2010, 2008c). Health Promotion interventions can also successfully limit the effect of stress and hereditary factors. CVDs can be prevented by cost-effective interventions that are feasible to implement even in low-resource settings. These have been identified by WHO (2017, 2018) as including Health Promotion ‘best buy’ interventions for cessation of tobacco use, reduction of salt and fat in the diet, encouraging regular physical activity and avoiding the harmful use of alcohol.

The impact of heart disease and stroke on individuals, their families and countries’ economy can be reduced by early and continuous health education that focuses on the
prevention and on healthy lifestyle choices, via medical services that provide effective
drugs and therapies, as well as through environmental policies in schools, work sites and
communities that promote good nutrition, regular physical activity and smoking cessation
(WHO, 2013a, 2016b). These multidisciplinary interventions are implemented through
political commitment and actions at the national and subnational levels (Aikins &
Agyemang, 2015; WHO, 2018, 2016, 2017; International Union for Health Promotion and
Education (IUHPE), 2018; Puska et al., 2016).

1.6.2.2. Cancer

In 2016, cancer deaths increased to nine million, representing 22% of all NCD-related
deaths and 16% of all global deaths (WHO, 2018a). It is projected that the number of new
cases of cancer will rise by approximately 70% over the next two decades. Globally, the
total annual economic cost of cancer in 2010 was estimated to be approximately US$ 1.16
trillion, which indicates the significant and increasing economic impact of cancer.

Between 30% and 50% of cancers can currently be prevented by avoiding the five leading
behavioural and dietary risks (WHO, 2016). These are high body mass index, low fruit and
vegetable intake, a lack of physical activity, tobacco use and alcohol use (WHO, 2018).
Tobacco use is the most important risk factor for cancer and is responsible for
approximately 22% of cancer-related deaths. Ageing is another fundamental factor in
relation to the development of cancer because the risk of developing many cancers
increases with age. Modifying or avoiding key risk factors can significantly reduce the
burden of cancer. This includes quitting tobacco use, managing obesity, eating a healthy
diet with a high fruit and vegetable intake, increasing physical activity, controlling alcohol
use and avoiding exposure to ionising and ultraviolet radiation, urban air pollution and
indoor smoke from household use of solid fuels, as well as controlling occupational
hazards (Gakidou et al., 2017).

Guidelines for developing effective Health Promotion interventions to prevent cancer in
Europe (Wild et al., 2019) recommend early screening for cancer, building infrastructure
for cancer prevention, using a coordinated approach through a collaborative network
across the multiple sectors that are involved in cancer prevention, providing resources
and reducing inequalities in access to cancer Health Promotion interventions, increasing awareness about cancer prevention and strengthening cancer prevention by financing interventions. Prevention needs to be aimed at the population as a whole, similar to, for example, anti-smoking legislation.

The full range of Health Promotion cancer prevention activities requires an interdisciplinary approach within the health sector that encompasses epidemiology, cancer registries, basic and applied laboratory sciences, public health, general practice, clinical science and health services. In addition, contributions from social sciences, health psychology and anthropology are required. Health education based on individual advice is required from physicians, community nurses, health educators, nutritionists and community workers, who can advise on behavioural changes in cultural contexts. It is important to identify cancer risk factors when planning, developing and implementing Health Promotion interventions. Finally, Health Promotion research is required to enable the translation of research recommendations on Health Promotion interventions into effective anti-cancer policy and practice (Wild et al., 2019).

1.6.2.3. Diabetes

In 2016, diabetes accounted for 1.6 million deaths, 4% of all NCD deaths, and 3% of global deaths (WHO, 2018a). All WHO regional figures were similar to the global figure except for those in the EMRO region, in which diabetes was markedly higher at 14%, which indicates that urgent Health Promotion action should be initiated in that region (WHO, 2018a). Globally, diabetes is projected to be the seventh leading cause of death in 2030 (WHO, 2017a).

Interventions that are cost-effective and feasible in all countries require early diagnosis, which can be accomplished through the relatively inexpensive testing of blood glucose levels. The Health Promotion management of diabetes includes adopting a healthy diet along with lowering blood glucose, increasing physical activity and avoiding tobacco and alcohol use (Abdul Rahim et al., 2014; WHO, 2018). In addition, blood pressure and blood lipid control are effective forms of management that can be cost-efficient in treating
diabetes. WHO (2017) emphasises counselling as a preventive tool for diabetes and includes counselling as one of the sixteen Health Promotion ‘best buy’ interventions.

There is increasing evidence that type II diabetes can be prevented largely through moderate diet and lifestyle modifications. Maintaining a healthy body weight and avoiding weight gain, increasing physical activity and reducing sedentary behaviours, such as prolonged TV watching, are important both for maintaining body weight and improving insulin sensitivity. Counselling and education for healthy lifestyles encompassing a healthy diet, regular physical activity, maintenance of a healthy weight, moderate alcohol consumption and avoidance of sedentary behaviours and smoking are required to prevent type II diabetes (Mann & Lin, 2012).

The European Guidelines for the prevention of diabetes include strengthening Health Promotion leadership and management, promoting multiple stakeholder collaboration and networks, dedicating adequate resources for implementation and community services and building infrastructure. These activities should go along with public health communication campaigns, early detection plans, ensuring equitable access to health care regardless of geography, socioeconomic status, language, culture or ethnicity, improving access to prevention services, provision of Health Promotion human resources, improving monitoring and surveillance focused on diabetes prevention and enabling and funding local innovations in Health Promotion intervention for prevention of diabetes (Richardson, Zaletel & Nolte, 2016).

1.6.2.4. Chronic respiratory diseases

In 2016, there were 3.8 million deaths due to chronic respiratory diseases, representing 9% of all NCD deaths and 7% of all global deaths (WHO, 2018a). Chronic obstructive pulmonary disorder (COPD) was the fifth highest cause of death in 2002 and is projected to be the fourth highest cause of mortality and to rank seventh worldwide by 2030 in terms of the burden of disease (WHO, 2014a; 2018).

The main goals of managing COPD include relieving symptoms, preventing and treating disease progression, complications and exacerbations, improving exercise tolerance and avoidance of allergens and other triggers. Overall, medication adherence and compliance
form the basis of COPD self-management daily activity. Health Promotion measures include maintaining a healthy lifestyle, monitoring nutritional needs, reducing smoking and limiting exposure to second-hand smoke, dusts, fumes and gases. Health education is important both for persons with COPD and those at risk of it (CDC, 2011, 2017; WHO, 2002, 2017, 2018).

Health Promotion strategic action plans and interventions are required to reduce the toll of morbidity, disability and premature mortality related to chronic respiratory diseases, and specifically asthma and chronic obstructive pulmonary disease (COPD) (WHO, 2017a). Health Promotion programmes and policies to increase effective collaboration among stakeholders are necessary, as is effective communication to heighten awareness of COPD among a broad spectrum of stakeholders and decision-makers (CDC, 2011; WHO, 2018a). The European Action Plan (2017) guidelines for the prevention of chronic respiratory diseases include Health Promotion strategies such as the provision of health education in the community and in public settings, focusing on methods of prevention, personalised care, prediction and participation, promoting self-management, promoting active and healthy ageing, improving the work productivity and wellbeing of chronic airway disease sufferers, reducing health and social inequities and supporting academic research in the field of chronic respiratory diseases (Hellings et al., 2017).

Some examples of interventions to prevent COPD are provided in the WHO profile of NCDs (WHO, 2018). WHO (2018) recommends increasing taxes on tobacco products, implementing graphic health warnings on all tobacco and allergen products, enforcing bans on tobacco and allergen advertising, promotion and sponsorship, preventing exposure to second-hand tobacco smoke and tobacco use in all workplaces and public areas and formulating a mass media campaign to educate the public on the hazards of smoking, second-hand smoke and allergens.

1.6.3. Risk factors for NCDs

A risk factor has been defined as ‘An aspect of personal behaviour or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or other health condition’ (CDC, 2013 p.
10). WHO has identified risk factors as either modifiable or non-modifiable, each of which are epidemiologically related to the occurrence of non-communicable disease. Non-modifiable factors, for example age, biological sex, race and family history, cannot be reduced by intervention (CDC, 2013). Modifiable risk factors for NCDs, however, include: i) behavioural, ii) socioeconomic and demographic factors, iii) inadequate access to health care, and iv) biological (metabolic/physiological) factors such as overweight, raised blood pressure, cholesterol and glucose (CDC, 2013).

1.6.3.1. Modifiable behavioural risk factors for NCDs

Modifiable behavioural risk factors or the 'intermediate risk factors', which can lead to non-communicable disease, are: i) tobacco use, ii) physical inactivity, iii) unhealthy diet and iv) harmful use of alcohol. These are the factors that increase the risk of NCDs (WHO, 2018) and are dealt with in turn below.

1.6.3.1.1. Tobacco use

Tobacco use, including smoking and the use of smokeless tobacco, is the leading risk factor for illness and death from major NCDs (WHO, 2018a). Tobacco use can cause cancer, coronary heart disease, and diseases of the lungs, peripheral vascular disease, stroke, fatal complications and stillbirth. Second-hand smoke can cause heart disease, including heart attack and lung cancer (CDC, 2013). Overall, tobacco accounts for approximately six million deaths every year (plus over 600,000 deaths due to exposure to second-hand smoke), which is projected to increase to eight million by 2030 (WHO, 2015a).

All countries (including Oman) can manage tobacco-related risk factors for NCDs by adopting the highest attainable policies recommended by the WHO’s MPOWER package. These include: i) monitoring the epidemic, ii) protecting people from exposure to second-hand smoke, iii) offering cessation services to tobacco users, iv) warning the public about the dangers of tobacco, v) enforcing a ban on advertising, promotion and sponsorship and vi) raising taxes and prices of all tobacco products, in addition to three interventions: i) product-warning labels, ii) educating the public about the health risks of tobacco use, and iii) media coverage of tobacco control activities (Al-Lawati et al. 2017).
Abdul Rahim et al. (2014) explained that anti-tobacco Health Promotion interventions should include anti-tobacco efforts at the government, organisational and community level. These Health Promotion interventions require: i) policies for tobacco control and smoke-free environments (labelling of products and taxation) (WHO, 2018), ii) implementation of tobacco control measures (taxation and control measures on tobacco companies), iii) prevention of smuggling of tobacco through strong laws, iv) reduction in the demand for tobacco by acting on political commitment to full implementation of the MPOWER measures, v) effective health education campaigns, individual level counselling and cessation of support services that can be provided at the primary care level, and vi) implementation of an effective Health Promotion partnership strategy for legislating and enforcing tobacco control laws, which requires a partnership between academics, NGOs, media, civil society and health professionals.

The most successful Health Promotion NCD policy strategy, according to IUHPE (2018), is the WHO Framework Convention on Tobacco Control (FCTC) (WHO, 2003), which emphasises Health Promotion strategies as the foundational instrument for governments in reducing smoking prevalence. Best practices consist of adopting multiple Health Promotion strategies, taxes, plain packaging, use of graphic health warnings, widespread community health education and mass media, bans on tobacco advertising and development of smoke-free policies to prevent exposure to second-hand smoke and cessation treatment for those who need it. It has been recognised that many of these Health Promotion strategies require multi-sectoral partnerships against the tobacco industry (IUHPE, 2018; WHO, 2004, WHO, 2018; Abdul Rahim et al. 2014).

1.6.3.1.2. Physical inactivity

In 2015, WHO attributed about 3.2 million deaths annually to insufficient physical activity (WHO, 2015a). Adults who are insufficiently physically active have a higher risk of mortality compared with physically active adults (those doing at least 150 minutes or equivalent of moderate-intensity physical activity per week) (WHO, 2015, 2018). Physical inactivity may cause weight gain or obesity, which are risk factors for premature mortality and developing non-communicable diseases and chronic conditions such as diabetes,
hypertension, cardiovascular diseases, various forms of cancer, stress, depression and anxiety (WHO, 2015).

Health Promotion interventions are required to increase physical activity in the population. These interventions are: i) community-wide public education and awareness campaigns for physical activity which include mass media campaigns (Abdul Rahim et al. 2014; WHO, 2017, 2018), ii) motivational and environmental programmes aimed at supporting increased physical activity levels (WHO, 2018), iii) multi-sectoral collaborations to reach physical activity targets, iv) multi-sectoral national policies and programmes to improve physical activity, and v) strategic initiatives to encourage physical activity within communities.

1.6.3.1.3. Unhealthy diet

In 2010, 1.7 million annual deaths from cardiovascular causes were attributed to excess salt/sodium intake (WHO, 2015). Reduction in salt intake to less than 5 g/day (2 g/day of sodium) can reduce blood pressure and the risk of coronary heart disease and stroke (WHO, 2015, 2018). Populations living in most countries are consuming more calories than they need in the form of fat and meats and energy dense and nutrient-poor foods such as refined sugars, starches and trans-fats. Unhealthy diets can cause coronary heart disease, stroke, hypertension, type II diabetes, cancer, diseases of the liver and gallbladder, and obesity (CDC, 2013; WHO, 2018).

Health Promotion interventions that can minimise unhealthy diets include the establishment of sodium-reduction targets, development of Health Promotion policies aimed at reducing population-wide salt consumption, inter-sectoral and multidisciplinary collaboration and partnerships with settings interventions (in schools, community, workplace). Available tools include legislation, enforcing correct labelling, product reformulation, fiscal incentives encouraging the production and consumption of foods with reduced sodium content, and community education using mass media, to ensure effective implementation (WHO, 2014a; WHO, 2018). Abdul Rahim et al. (2014) proposed various Health Promotion interventions to tackle unhealthy diets in the EMRO region, such as: i) policies to reduce trans-fat intake, ii) pricing regulations, iii) import restrictions,
iv) reformulation of food products by industry, and v) health education campaigns to educate consumers about trans-fats.

1.6.3.1.4. Harmful use of alcohol

Worldwide, in 2012, more than half of the 3.3 million total deaths were associated with harmful drinking of alcohol (WHO, 2015). This was the highest in the European Region and the Americas (WHO, 2014, 2018). WHO (2018a) estimated the level of alcohol consumption worldwide in 2016 at 6.2 litres of pure alcohol per person aged 15 years and over (equivalent to 13.5 g of pure alcohol per day).

Successful Health Promotion interventions to reduce harmful use of alcohol include implementing population-based measures and developing policies and strategies at the national and international levels. National policies such as drink-driving policies, pricing policies, reduced availability and marketing of alcohol and improved response by health services are important, while individual interventions such as screening for harmful drinking and treatment of alcohol dependence are also required (WHO, 2014, 2018).

The UN has responded to the challenge of NCDs by developing sixteen Health Promotion interventions considered to be the most cost-effective and feasible for NCD prevention. These interventions act on the four modifiable behavioural risk factors, as well as directly on diabetes, cardiovascular diseases and cancer, as follows. Tobacco use is reduced through increased taxes, packaging with warnings, bans on advertising, provision of smoke-free public places and health education. Unhealthy diet is reduced by Health Promotion interventions to reformulate food by reducing salt in food, having content labels on food packaging, providing supportive environments by providing low sodium options and health education. Physical inactivity is reduced by Health Promotion interventions to provide health education. The harmful use of alcohol can be reduced by increasing taxes, banning advertising and restricting availability of alcohol. Finally, drug therapy is used to manage CVDs and diabetes, while vaccines and screening are used to manage cancers (WHO, 2017, 2018a).
1.6.3.2. Biological risk factors
Risky behaviours lead to four key metabolic/physiological (biological) changes that increase the risk of NCDs: i) raised blood pressure (hypertension), ii) overweight/obesity, iii) hyperglycaemia (high blood glucose levels), and iv) hyperlipidaemia (high levels of fat in the blood/lipids) (CDC, 2013). In terms of attributable deaths, the leading biological factor globally is elevated blood pressure (to which 18% of the global deaths are attributed), followed by weight gain and obesity and raised blood glucose (CDC, 2013).

1.6.3.3. Socioeconomic and demographic risks factors
Risk factors for NCDs include ageing, rapid unplanned urbanisation and the globalisation of unhealthy lifestyles. Globalisation causing unhealthy diets may present in individuals as raised blood pressure, increased blood glucose, elevated blood lipids and obesity (WHO, 2018a). The socioeconomic risk factors include a lack of clean and safe environments, universal health services, universal education and employment (Catford, 2005; WHO, 2010). The provision of the above among all community groups is essential for the long-term prevention of NCDs (Marmot & Bell, 2019; EMRO-WHO, 2010; WHO, 2014, 2018a).

1.6.4. Determinants of health and their effect on NCDs
The WHO has encouraged a shift in focus from the individual’s health status back to the social and environmental factors or determinants that can affect people’s health (Marmot, 2019). Determinants of health are factors that can affect individual and community health for better or worse, such as biology and genetic factors, individual behaviours, lifestyle, social, economic and environmental factors, and health services and policy (WHO, 2016a). WHO defines the social determinants of health as ‘the conditions in which people are born, grow, live, work and age, including the health system’ (WHO, 2011b, p. 2). Social determinants of health reflect the social and physical conditions of the environment and impact a wide range of health and quality of life outcomes, including NCDs (Marmot, 2019; WHO, 2011, 2014a, 2018a).

Marmot & Bell (2019, p. 10) stated that:

‘Social determinants shape the distribution of the four main behavioural risk factors of NCDs—that is, unhealthy diet, physical inactivity, tobacco smoking,'
and excess alcohol consumption—and three physical conditions that are risks for NCDs—namely, raised blood pressure, obesity, and diabetes’.

The Dahlgren-Whitehead model (1991), presented below in Figure 3, is more specific and divides these social determinants into layers.

![The Dahlgren-Whitehead (1991) model of determinants of health](image)

**Figure 3. The Dahlgren-Whitehead (1991) model of determinants of health**

The four layers of the Dahlgren-Whitehead determinants of health model range from the socioeconomic and environmental to the individual levels. The first layer includes general socioeconomic, environmental and cultural conditions. An example of how general socioeconomic conditions affect NCDs is that high income countries have a better Health Promotion capacity to tackle NCDs, resulting in lower mortality, morbidity and disability related to NCDs (WHO, 2010a, 2014a, 2018a).

Other general socioeconomic conditions include equality and equity. Countries which have more equality and equity in providing Health Promotion services are more successful in tackling NCDs. These countries disseminate services including those targeting the social determinants of health equally for every individual and region in the country, which ultimately lead to improvements in the health of their nations. For example, the Americas, Europe and Western Pacific Regions are performing better than the Eastern Mediterranean, South-East Asian and African regions (WHO, 2010b, 2014a,
2018a, Marmot & Bell, 2019). Marmot & Bell (2019, p. 11) also provide evidence for how individuals living in low-income countries struggle to follow a healthy diet:

‘In 18 countries, fruit and vegetable consumption was low in all countries (average of 3.76 servings a day) but lowest in low-income countries (2.14 servings a day) compared with high income countries (5.42 servings). Affordability was important: in low-income countries the cost of five portions of fruit and vegetables a day represented almost 52% of household income, compared with 18% in low middle-income countries, 16% in upper middle-income countries, and 2% in high-income countries’.

The second layer of the model is working and living conditions. The World Health Assembly in the 1984 Health for All strategy provided an aspirational goal, based on the concept of equality ‘sameness’ and equity ‘fairness’ in health. Health for All has been interpreted differently by each country in the light of its social and economic characteristics, health status and morbidity patterns of its population and the state of development of its health system. Access to universal health services is another complex obstacle, however. It has been argued that equality and equity of health care services has not been achieved because of low socioeconomic levels and inequality of distribution of resources and services (e.g., in low- and middle-income countries (WHO, 2010b, 2011, 2014a; 2018a, Marmot, 2019). Marmot (2019) stated that social determinants shape the distribution of prevention, diagnosis and treatment of NCDs, including the affordability of drugs.

Marmot & Bell (2019) gave an example of how inequality and inequity in services in the country affect NCDs even when the country is a high-income one:

‘In England, among children aged 10/11 in year 6, the final year of primary school, in 2016/17 the prevalence of obesity in the most deprived areas was 26% compared with 11% in the least deprived areas. Over a 10-year period, the rise in obesity prevalence slowed in children from affluent areas but continued in children from deprived areas. Thus, inequalities increased. We cannot solve the obesity problem without solving the inequality problem’.
Marmot also states how inequality in childhood can cause an individual to adopt unhealthy behaviours, leading to NCDs in adult life, as follows:

‘It is predictable that inequality in childhood obesity will continue into adulthood with, in consequence, increasing inequality in the health problems caused by obesity. The social determinants driving the obesity gap need to be tackled urgently. The causes of obesity are complex, including genetic/physiological factors, growth patterns in early life, and eating and physical activity behaviours. These, in turn, are influenced by the social determinants of health’.

NCDs and associated risk factors, mortality, morbidity and disabilities are also related to the socioeconomic level of the country (WHO, 2000; 2010a, d; 2011; 2014a; 2018a). Marmot (2019) stated that ‘social determinants trigger stress pathways affecting mental health and other NCDs. Stress is also associated with unhealthy behaviours that are risks for NCDs’. The most recent WHO country profile report (2018) declared that 78% of all NCD deaths and 85% of premature adult NCD deaths occurred in low- and middle-income countries (LMICS). Similarly, adults in low- and lower-middle-income countries face the highest risk of death from NCDs (21% and 23% respectively), which is almost double the rate for adults in high-income countries (12%). In high-income countries, the proportion of NCD premature deaths was almost half (25%) that of low-income (43%) and lower-middle-income (47%) countries (WHO, 2018a). Within countries, the poorest and most vulnerable populations are those most at risk and the least likely to have access to the services they need to detect and treat NCDs (WHO, 2018a). Approximately 15% of the population in lower-middle-income countries experiences disability, and the increase in NCDs is estimated to account for about two-thirds of all years lived with disability in low- and middle-income countries (WHO, 2013c, d; WHO, 2018a).

Marmot (2019) provided evidence that individuals in low socioeconomic countries consume less vegetables and more alcohol, which increases the risk of NCDs,

‘While evidence about socioeconomic distribution of dietary patterns is limited in low- and middle-income countries, the evidence available shows that low
socioeconomic groups consume lower quantities of fruit and vegetables than more affluent groups. Affordability of a healthy diet is a critical factor for those on low incomes in all countries. Low socioeconomic groups in low and lower middle-income countries are more likely to drink alcohol than high socioeconomic groups’.

Research on NCDs needs to include the study of inequality (e.g., measures of social determinants of health) (McQueen, 2013; Marmot, 2011, 2019; WHO, 2011; 2012; 2014a; 2018a) so as to achieve an understanding of how the social conditions for the prevention of NCDs develop over time at the population level. In general, according to Catford (2005), the WHO-EMRO tool (2010a), WHO (2005) and Marmot (2019), governments need to increase access to: i) a clean and safe environment, ii) universal education, iii) universal health services, and iv) employment opportunities. Such efforts can improve NCD prevention and control at the national, regional and provincial levels, which in turn may support the development of the country (WHO, 2008b; 2010a, 2014a, 2018; Marmot, 2019).

1.6.5. Health Promotion responses to tackling NCDs

The four major NCDs—cardiovascular diseases, diabetes, cancer and respiratory diseases—share four core modifiable behavioural risk factors: tobacco, alcohol, diet and physical activity (WHO, 2018a). Section 2.1 above outlined the evidence that Health Promotion interventions can reduce these risk factors. It is important to highlight, however, that for a sustained population-level impact, individual Health Promotion interventions are not sufficient.

Mendis (2010) explained that prevention and control of NCDs must address the modifiable behavioural risk factors. Changing the behaviour of people is challenging and cannot be accomplished by health education alone, but needs an enabling policy environment to help develop Health Promotion policies. Such policies address the unhealthy behaviours of people, including tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. These behaviours are influenced by economic growth, globalisation and unplanned urbanisation (WHO, 2014). Mendis (2010) further
emphasised the importance of multi-sectoral actions such as sector-wide public policies in sectors including transport, agriculture, education, finance, social services and trade. He asserted that only such supportive multi-sectoral policy environments can provide people with opportunities and affordable choices to adopt healthy behaviours in relation to diet, physical activity, tobacco and alcohol use.

Health Promotion interventions can be successful in tackling the social determinants of health. These are the ‘causes of the causes’ of NCDs and include health inequalities—the unequal conditions in which people are born, grow, live, work and age; and the inequities in power, money and resources that give rise to them. These unequal conditions depend on dimensions of social stratification, including socioeconomic status, gender, ethnicity and disability. Successful interventions addressing the social determinants of health are necessary. In addition, Health Promotion approaches can prevent unnecessary disability and mortality from NCDs (Marmot & Bell, 2019; van den Broucke, 2017; McQueen et al., 2013; WHO, 2008).

Health Promotion is increasingly being adopted globally to improve population health and address health inequalities and the social determinants of health (CSDH, 2008; WHO, 2009; van den Broucke, 2017). As Catford (2005) argued ‘Health Promotion is a tried and tested approach for chronic disease prevention’. Similarly, McQueen et al. (2013, p. vii) stated that,

‘Health Promotion is the area of public health that is most concerned with addressing the broad health issues and focusing public health away from a concern with treating rather than preventing diseases, particularly in the area of non-communicable diseases. Many of the causes and solutions lie outside the area of clinical medicine’

1.7. Structure of this Thesis

The second chapter of this thesis presents the literature review, which provides a context for this study. It includes a description of the search strategy employed in phase one to identify frameworks and tools relevant to Health Promotion capacity-mapping in the
context of NCDs. Information on Health Promotion, capacity-mapping and NCDs is critically reviewed.

The third chapter details the research methodology, including the research question, aim and research objectives; the research strategy and design and the research procedures implemented.

The fourth chapter presents the results and is broken down into two sections. The quantitative results (phase two) include the following: reliability, response rates, demographic details of the participants, responses to the questions related to the eight domains, and analysis of the quantitative results. The second section presents the qualitative (phase three) results, reporting on the template thematic analysis undertaken on the interview data.

The fifth chapter is the discussion chapter, which focuses on integrating the quantitative and qualitative results. The discussion begins with background information, including the rationale for the study, summarising, reporting and commenting on the key results. The recommendations obtained from the participants in the qualitative study, who are the key policymakers who have the power to implement the Health Promotion policy in Oman, are critically considered. The strengths of the whole study and the innovative steps that were adopted for mapping the Health Promotion capacity interventions relating to NCDs are discussed. The limitations of the study are also outlined and discussed. Recommendations for the Omani government, the MOH, and other relevant sectors are outlined, as well as the avenues for future implementation and research. At the end of the chapter, the overall conclusion is provided.
2. Literature Review

This literature review focuses on the areas of Health Promotion and building capacity for Health Promotion for the prevention of NCDs in Oman. The first section gives a general background to the study. The second section includes a description of the search strategy employed to identify literature on frameworks and tools relevant to Health Promotion capacity-mapping in the context of NCDs. The key findings from this search are summarised in the third section. The fourth section reviews relevant definitions and concepts of Health Promotion, capacity, capacity-building/development and capacity-mapping. The fifth section explores NCDs in detail. The sixth section focuses on the existing situation and issues related to Health Promotion capacity-mapping. The seventh section summarises the research objectives, and the eighth section concludes the chapter.

2.1. Background to this Study

Health Promotion is employed worldwide to improve population health and address health inequalities and the social determinants of health (WHO, 2008b; WHO, 2009). The Ottawa Charter for Health Promotion defines Health Promotion as ‘the process of enabling people to increase control over, and to improve, their health’ (WHO, 1986, p. 1). The Ottawa Charter highlights the need to develop the capacities for health, the need for health policy that tackles different health issues—such as NCDs—and the need to consider the determinants of health in the health development process, including addressing inequities. Mapping Health Promotion capacity is complex since each country has different, although often overlapping, priority health issues. These issues are deeply linked with existing socioeconomic, cultural, political and environmental factors. This means that there is no single appropriate approach to capacity-mapping (Catford, 2005; WHO, 2010a).

NCDs are non-infectious chronic diseases. The four types of NCDs are cardiovascular diseases (e.g., heart attacks and stroke), diabetes, cancers and chronic respiratory diseases (e.g., chronic obstructive pulmonary disease and asthma). Globally, these four groups of diseases are the cause of the majority of NCD-related deaths. In Oman, NCDs
account for approximately 72% of the total deaths. Of these deaths, CVDs account for 36%, cancer 11%, diabetes 8% and chronic respiratory diseases 2% (WHO, 2018a).

The crisis of NCDs raises the question of how we can change from a curative-only approach to one that includes Health Promotion (Abdul Rahim et al., 2014; Catford, 2005; McQueen, 2013; WHO, 2010a, 2010b; WHO, 2018). The superior efficacy of Health Promotion approaches has been indicated in the literature from Europe and USA (Cohen, Neumann & Weinstein, 2008; International Union for Health Promotion and Education (IUHPE), 2018; Marmot, 2019; North Karelia Project, 2009; Puska et al., 2016; WHO, 2010a, WHO, 2010b, WHO, 2018).

NCDs are preventable by applying Health Promotion interventions which tackle modifiable lifestyle risk factors, including tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol (WHO, 2018a). There is evidence from other countries that NCDs can be reduced by including health promoting initiatives alongside treatment approaches (e.g., Puska et al., 2009, 2016). A review of the effectiveness of Health Promotion for the prevention of NCDs (Halpin, Morales-Suárez-Varela & Martin-Moreno, 2010) argued that these approaches are most effective for reducing the use of tobacco, compared to other risk factors. In the case of alcohol, a recent review of systematic reviews (Siegfried & Parry, 2019) found that six alcohol control techniques were possibly beneficial (a more precise conclusion was not possible because the reviews often lacked quality). In the case of diet, Verstraeten et al. (2012) demonstrated that having a healthy diet can reduce weight, which in turn reduces the probability of developing NCDs as a result of obesity. In the case of physical activity, a review of the effectiveness of maintaining regular physical activity as a way of preventing NCDs (Heath et al., 2012) showed that informational, behavioural, social, environmental and policy interventions all improved physical activity levels.

The European Action Plan for the Prevention and Control of NCDs (WHO, 2016) recommended that priority Health Promotion interventions for the prevention and control of NCDs are the ‘best buys’ (WHO, 2017, 2018a; IUHPE, 2018; Puska et al., 2009, 2016), and that we should aim to implement a set of cost-effective, evidence-based
interventions in the European region. WHO (2016) reported that one of the best evidence-based Health Promotion interventions is the provision of interventions for tobacco cessation, including brief advice on tobacco cessation for all patients in all sectors; the integration of tobacco cessation treatment into the training of health professionals; and provision of targeted support for people at risk, such as patients with cardiac and respiratory disorders, patients at risk of cancer, individuals with a family history of tobacco use, pregnant women, parents of young children, and people with mental health conditions.

WHO (2017) referred to the ‘best buys’ as interventions that are developed to improve diet and physical activity and to prevent the harmful use of alcohol. These comprise interventions to promote healthy lifestyles and to enhance community capacity to improve nutrition, physical activity interventions and alcohol prevention. The interventions needed to encourage healthy diets are, for example, trade/economic policies that reduce salt, sugar and saturated and trans-fats and taxes on sugar-sweetened beverages and other unhealthy foods (WHO, 2016).

Recommended interventions to increase physical activity include integrating physical activity into prevention strategies across all health sectors and community activities and providing incentives for and reimbursement of physical activity-based prevention or rehabilitation programmes by health insurance companies (WHO, 2016). Health Promotion interventions to prevent harmful use of alcohol, such as the provision of training and brief advice programmes have also been recommended by WHO (2016). These can be offered to populations at risk of harmful alcohol consumption, including those at risk of or with a family history of hypertension, cardiac diseases, diabetes, cancer and chronic respiratory diseases (WHO, 2016, 2017, 2018a).

Al-Bahlani and Mabry (2014) presented recommendations for Health Promotion interventions seeking to adjust the behavioural risk factors for NCDs. They emphasised the benefits of Health Promotion policy and advocated targeted laws and regulations to promote healthy eating. These include food labelling (Campos-Ortiz, 2011; Capacci et al., 2012) to regulate salt in foods (Cobiac et al., 2010; WHO, 2006), regulation to reduce
trans-fats in food processing (Choi, 2008; L’Abbe et al., 2009; McColl, 2008; Mahapatra et al., 2010; Mello, 2009; Stender et al., 2006), regulation on selling and advertising foods to children (WHO, 2010), and the application of taxation on sugary foods and beverages. Models from both developed and developing countries have demonstrated that fiscal policy interventions can be effective and cost-effective in reducing NCDs (Al-Lawati, Mabry & Al-Busaidi, 2017; Basu et al., 2014; Bertram et al., 2012; Brownell & Frieden, 2009; Popkin et al., 2012; Powell et al., 2012).

2.2. Search Strategy Phase One

This literature review was the first phase of this study. It aimed to identify and critically consider the literature on Health Promotion capacity for NCDs, including capacity maps, frameworks and tools. The review involved a systematic search using the Scopus database, as well as other non-systematic searches outlined below. Primary (e.g., peer-reviewed journals), some secondary (e.g., books) and grey literature (e.g., conference papers, reports) was available on the Scopus database. The main databases selected for the non-systematic search were i) subject databases (i.e., PubMed, Zetoc), ii) other sources: Google, Google scholar, Google image and YouTube videos, and iii) the James Hardiman library at NUI Galway (soft and hard form primary, secondary and grey literature). The systematic and non-systematic searches identified journal articles, policy documents (from Oman), books, newspaper articles and relevant reports from international and national organisations (i.e., WHO, UNICEF, UN, USAID, IUHPE, HP SOURCE, HPRC).

2.2.1. Systematic Scopus literature search

The research question for this PhD is ‘What is the Health Promotion capacity for non-communicable disease in Oman?’ For the purposes of developing a search strategy the research question was phrased in four different ways (as one question and three phrases):

i. What is the capacity for Health Promotion for non-communicable disease in Oman?

ii. Developing Health Promotion capacity framework and tools for non-communicable diseases in Oman
iii. Developing an assessment tool for measuring the capacity for Health Promotion for non-communicable diseases in Oman, and

iv. Mapping the capacity for Health Promotion for non-communicable diseases in Oman.

Based on this, there were four fundamental concepts for the literature search. These were i) capacity, ii) capacity-mapping, iii) capacity-mapping framework OR tool, and iv) Health Promotion OR Non-Communicable Disease. For each of these four concepts, synonyms were found (see SCOPUS search syntax in Appendix A). Only two of these concepts were essential (i.e., ‘Health Promotion or Non-Communicable’ Disease and ‘framework’ or ‘tool’, so these were included in the search using ‘AND’. On the other hand, only one of the two concepts ‘capacity’ and ‘capacity-mapping’ was necessary, and so these were included as a group using ‘OR’ between each concept.

2.2.1.1. Inclusion criteria

Documents in English or Arabic were included, and the concepts were searched for in the title of the paper only (i.e., abstracts were not initially searched).

2.2.1.2. Exclusion criteria

Literature that involved clinical treatment or clinical intervention was excluded. Literature that was published prior to 2000 was also excluded.

2.2.2. Non-systematic searches

When the systematic search was completed, it was clear that certain important papers had been excluded. For example, Catford’s (2005) Health Promotion capacity framework did not emerge as a result of the search. This is because the title of the Catford’s paper did not contain any of the search concepts. To capture other relevant papers, therefore, a number of non-systematic searches were undertaken using Google and Google Scholar. These searches employed the same concepts as above but in the body text and not just in the title. In addition, terms such as NCDs, plans, policies, NCD country profile, risk factors and social determinants of health for the four NCDs were used.
2.2.3. Results of the literature search

The Scopus search outlined above resulted in 518 documents and many of the same documents were found in the non-systematic search. Many relevant documents, particularly those published by WHO, were only found in the non-systematic search. The documents included papers on Health Promotion capacity-mapping, on Health Promotion capacity-mapping frameworks and on the Health Promotion capacity-mapping tools. The results of this search on Health Promotion and NCD-related capacity, capacity-building, capacity-mapping and capacity development with the framework and tools will be discussed in sections 2.4 and 2.5 below.

2.3 Health Promotion

Even though the literature shows that combining Health Promotion with curative approaches is an appropriate way to prevent NCDs (e.g., Abdul Rahim et al., 2014; Marmot & Bell, 2019; WHO 2014, 2018, 2017), the term Health Promotion itself is in fact rarely mentioned, with these actions tending to be described as ‘public health’. This may be because the Health Promotion term and concept is yet not known by many public health experts and others who work on activities that improve health on individual and community levels (Nam & Engelhardt, 2007). Health Promotion is in fact a relatively new discipline that only started officially in 1986 (WHO, 1986). The literature of WHO and the literature targeted at tackling NCDs needs to explain that Health Promotion is a broad discipline that includes interventions on the individual levels (e.g., health education), interventions on the community levels (e.g., community campaigns to improve healthy lifestyles) and interventions on the policy, government and organisational level (e.g., policies to improve the social determinants of health). Health promotion is a transdisciplinary field of action within public health that include social science which makes it goes beyond analytical and technical knowledge to focus on real world problems as people experience them. The core body of the health promotion specialists within academia, policy and practice settings can help to maintain the identity and traditions of the emerging discipline, and further advance the body of knowledge, values, competencies and research methods that make health promotion unique. According to Van den Broucke (2017) “health promotion is not yet based on a single paradigm with its own epistemological, theoretical and methodological foundations. Instead, its theoretical
and disciplinary roots are borrowed from longer established disciplines, such as sociology, psychology, education science, political science, communication science, marketing and ethics (Bunton and Macdonald, 2002). As such, health promotion is at best an emerging discipline (Nutbeam, 2002).”

Nevertheless, Health Promotion has its own set of concepts, principles values and approaches, which strengthening the paradigm shift it caused from an individualistic to a holistic liberalisation approach that improve the social justice, equity, empowerment and partnerships. Health promotion is using ‘evidence based practice in medicine and preventive interventions using updated evidence of information, knowledge, skills, practices and strategic actions which proves the evidence interactions between various determinants of health in different health promotion issues (Van den Broucke, 2017).

2.4. Health Promotion Capacity

2.4.1. Health Promotion and WHO Conferences

Health Promotion is applied to improve population health and address health inequalities as part of a strategy to prevent NCDs and to improve the social determinants of health (WHO, 2008b of CSDH; Marmot & Bell, 2019; Nyamwaya, 1996; WHO, 2009). In the Ottawa Charter for Health Promotion, the WHO defined Health Promotion as the process of enabling people to increase control over and to improve their health (WHO, 1986). The charter specifies the need for health policies and strategies that tackle different health issues, such as NCDs, and the need for a Health Promotion structure and workforce.

The concept of Health Promotion emerged in the twentieth century, when epidemic diseases eventually led to pressure for environmental and sanitary reforms within the overcrowded industrial towns (Gowshall, 2018), resulting in a change in the lifestyle of populations in Europe and the USA, which subsequently led to the increase in NCDs. In the 1950s and 1960s, the focus shifted towards the need for changes in individual health behaviour with respect to, for example, family planning, venereal disease, accident prevention, immunisation, cervical smear checks, weight control, alcohol consumption and smoking. The change in the focus from communicable to non-communicable diseases was related to the evolution in population lifestyles. This emphasis on a ‘lifestyle
approach’ led to a concentration of effort on health education. By the 1970s, health education and promotion was presented as an ideology focusing on cutting costs and on placing responsibility on individuals (Pratt, 2016).

The Alma-Ata international conference on Primary Health Care (PHC) in 1978 called on the world community to protect and promote the health of all the people of the world by the year 2000. In Alma-Ata, the WHO led the shift in focus from the individual’s health status back to social and environmental factors by calling on the world community to promote PHC as ‘essential health care, accessible to all, at an affordable cost ... through life ... in the spirit of self-reliance and self-determination’ (WHO, 1978, p. 3). The first Health Promotion conference was held in Ottawa on 21 November 1986 to present the charter for action to achieve ‘Health for All’ by 2000 and beyond through the broader approach of Health Promotion and Public Health. This produced what has been referred to as the ‘new’ public health strategy to implement health for all (WHO, 1986; McKee et al., 2016). The Ottawa Charter was primarily a response to growing expectations for a new public health movement around the world. The Ottawa charter included five Health Promotion strategic actions and emphasised the importance of developing capacity for Health Promotion if population health was to be improved.

2.4.2. Concepts and definitions of capacity

Because this research aims to examine the capacity of Health Promotion for preventing NCDs, it is crucial to define capacity, capacity-building, capacity development and capacity-mapping in the health sector specifically.

2.4.2.1. Health Promotion capacity

In the field of health, capacity has been defined as ‘an ability of individuals, organisations or systems to perform appropriate functions effectively, efficiently and sustainably’ (Milen, 2001 p. 5). In other words, capacity in health is the ability of a professional, a team, an organisation or a health system to perform their defined functions effectively, efficiently and sustainably so that the functions contribute to the mission, policies and strategic objectives of the team, organisation or health system (Milen, 2001). One strength of Milen’s definition of capacity in health is that it includes the concept of
strategic planning (i.e., strategic objectives), which consists of mission, vision, objectives and strategies (Bryson, 1988). Milen’s (2001) defined functions are usually determined by means of a situation analysis assessment that directs what functions should be performed. Good capacity is considered to be effective (i.e., successful) performance of the defined functions.

A requirement for good capacity is the performance of the defined functions, which refers both to the continued ability to perform the defined functions and the need for ongoing assessment of what exists and what needs to be developed (Milen, 2001). The level of capacity within the health sector thus includes the capacity of health professionals, teams, health organisations and health systems, which require in each case the development of appropriate skills or competence. LaFond et al. (2002), consistent with Milen (2001), outlined levels of capacity as follows: ‘the four levels where capacity is needed to ensure overall health system performance: i) the health system levels, ii) organisational level, iii) health personnel level and iv) individual/community level’. Also consistent with Milen (2001), Bagley and Lin (2009) stated that ‘to operate effectively the public health system requires infrastructure and the capacity to act’.

Other definitions of capacity that relate to health include that of Joffres et al. (2004, p. 2): ‘the extent to which organisations within communities use and build upon their knowledge, skills, resources and abilities to take action on health Promotion’. Joffres et al. (2004) further specified the indicators which can be used to measure capacity: (i) existing health programmes/activities; (ii) existing organisational practices supportive of health activities; and (iii) environmental factors supportive of (or challenging to) Health Promotion. This definition is related to NCDs because heart disease is one of the four main NCDs, and their definition mentioned the term Health Promotion, which is not usually included in capacity definitions.

Beaglehole and Dal Poz (2003, p. 3) describe public health capacity as ‘the ability to achieve stated public health objectives at the national, regional and global levels with respect to both ongoing and emerging health problems’. This definition introduced the term public health capacity, which specifies the type of capacity. The definition also
separates the country into national and regional levels. Many countries have a Ministry of Public Health which drives the plan for public health into action. Oman does not have a dedicated Ministry of Public Health or a national agency for public health to drive the public health and Health Promotion actions and indicators forward. There are, however, public health departments in the MOH which work with the clinical departments to provide public health services (e.g., Department of Health Education and Department of Nutrition).

Another definition of capacity from a developmental perspective comes from the United Nations Development Programme (2009) ‘capacity is the ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner’ (UNDP, 2009, p. 53). Overall, it appears that there is no single ‘correct’ definition of capacity, and in choosing a definition the utility of that definition for the particular context must be the central consideration.

For at least the past two decades, the national capacity for Health Promotion has been the subject of conferences, scholarly dialogue and political debate (French Committee for Health Education, 1995; Wise, 1998; Wise & Signal, 2000). The World Health Organization (WHO) conferences on Health Promotion, for example, have repeatedly focused on the health capacity for health development. In the Fifth Global Conference on Health Promotion in Mexico City in 2000, national investment for health and the need to build infrastructure for Health Promotion were dominant themes. The conference participants called for strengthening of the existing capacity for implementing strategies and the development of countrywide action plans (WHO, 2000). The conference also emphasised as dominant themes the crucial need for a national investment on health and to build infrastructure for Health Promotion (Moodie et al., 2000; Ziglio et al., 2000).

The Sixth Bangkok Global Conference on Health Promotion, held in 2005, and entitled ‘Health Promotion in a Globalised World’, focused on mapping the capacity for Health Promotion at the global level. The conference agreed for the first time on the scope and definitions of what to measure. This agreement was developed into a ‘Capacity Wheel’ by Catford (2005). WHO used the Capacity Wheel to create a survey tool (WPR, 2005; WHO,
2010a), labelled as ‘Key requirements for effective Health Promotion’. This tool was developed by Drs K.C. Tang, Desmond O’Byrne and Robert Beaglehole of the Department of Chronic Diseases and Health Promotion, WHO HQ (Catford, 2005; Lin & Fawkes, 2005) and has been implemented in the Pacific Region (Lin & Fawkes, 2005), Asian region—Korea and Japan (Nam & Engelhardt, 2007)—and in the EMRO region (WHO-EMRO, 2010a). The tool can provide recommendations for decision makers on Health Promotion capacity, building and development.

The Seventh Global Conference, held in Kenya in 2009, focused on developing knowledge and skills for inter-sectoral collaboration and effective delivery as a means of reaching a critical stage of capacity for Health Promotion globally (WHO, 2009). The Eighth Conference, held in Helsinki in 2013, asked governments to build the Health Promotion capacities of Ministries of Health to collaborate with other sectors of the government to achieve better health (WHO, 2013a), which clearly suggests that Health Promotion should not be anchored only within the health system but should also extend to other sectors (McQueen, 2013; Marmot & Bell, 2019). Similar was the vision of the Ninth Global Conference on Health Promotion in Shanghai (WHO, 2016), ‘Health Promotion in the Sustainable Development Goals (SDGs)’, which placed the emphasis on good governance and governmental approaches that consider the health implications of all policy decisions.

2.4.2.2. Evolution of the concept of Health Promotion capacity

Joffres et al. (2004) reported on how concepts in Health Promotion have evolved over time. They argued that in 1992-93, Health Promotion capacity-building focused on infrastructure and building structures, staff and skills (Meissner, Bergner & Marconi, 1992; Roper et al., 1992; Schwatz et al., 1993). In 1994-1995, the focus was on programme sustainability (Bracht et al., 1994; Rissel et al., 1995). By 1997-2000, the focus had shifted to problem-solving skills to address health and other developmental issues (Crisp et al. 2000; Hawe et al. 1997).

Since 2001, numerous authors have addressed strategic planning for Health Promotion capacity development. Strategic planning includes vision, mission, objectives, strategies and results (LaFond et al., 2002; LaFond & Brown, 2003; Joffres et al., 2004; Bagley & Lin,
2009; Catford, 2005; Mittelmark et al., 2006; Menon, Karl & Wignaraja, 2009; Aluttis et al., 2014; Battel-Kirk & Barry, 2011; WHO, 2013a, 2014, 2016, 2018). These authors developed strategic planning tools to serve as a coherent and defensible basis for decision making. They used these tools to help solve major problems in health, improve performance, deal effectively with rapidly changing circumstances, and build team work and expertise and to allocate resources. Over time, strategic planning has evolved more into a result-based management system. According to Balogh et al. (2017) results-based management includes setting the vision, developing the theory of change, defining and formulating the results within the theory of change and translating the theory of change into a log frame (inputs, outputs, outcomes) of risks, assumptions, performance indicators, means of verification, baseline and targets.

2.4.3. Health Promotion capacity-building

The concept of capacity-building for Health Promotion has gained increasing attention during the last decade. National, as well as international, organisations all over the world have increasingly focused their efforts on capacity-building to improve performance in the health sector (Aluttis et al., 2014; Catford, 2005).

2.4.3.1. Definitions of capacity-building

The use of the term capacity-building is now common across various disciplines, but there is no universally agreed definition (Bagley & Lin, 2009). According to Bagley and Lin (2009, p. 99), capacity-building ‘is talked about in different ways - as a means to an end, as a process, or as an end in itself’. Similarly, according to LaFond et al. (2002), up until then, there was no agreement among scholars on the definition of capacity-building or on methods to evaluate it. A possible reason for this diversity of meaning is given by Crisp et al. (2000), who pointed out that capacity-building is integrated in many different disciplines such as community empowerment, international development and public health disciplines. Nevertheless, for the purposes of this thesis, it is important to focus on specific definitions.

Hawe et al.’s (1997) definition of capacity-building is the most frequently employed definition in the Health Promotion literature (e.g., Aluttis et al., 2014; Bagley & Lin, 2009;
Battel-Kirk & Barry, 2011). Hawe et al. (1997, p. 1; 2001, p. 3) defined capacity-building in the health sector as ‘an approach to the development of sustainable skills, organisational structures, resources and commitment to health improvement in health and other sectors to prolong and multiply health gains many times over’. This definition indicates that the aim of capacity-building is to ensure that the environment is conducive to improving health many times over, independent of any external threats. Aluttis et al.’s (2014) interpretation can be justified as follows: Aluttis et al. (2014) pointed out that capacity-building is not directly aimed at improving the health status but at ensuring that the conditions are in place for health improvement. Creating conditions and not having direct effects is consistent with the Ottawa Charter’s (WHO, 1986) strategy, which involves implementing Health Promotion to create supportive environments to make the healthy choice the easier choice. By creating supportive environments, people themselves are the ones who are empowered to choose to become healthy rather than getting direct ‘treatment’ from the health sectors (WHO, 1986, 2010; van den Broucke, 2017; Hunter et al., 2019). Multi-sectoral partnerships ensure that supportive conditions are in place through collaborations (WHO, 1986). Partnerships also lead to capacity-building, which can be independent of external events.

A key strength of the Hawe et al. definition is its inclusion of non-health sectors, reflecting that it is necessary to build Health Promotion capacity not just in the health sector, but also in other sectors to prolong and multiply health gains. Improving partnerships is a part of building Health Promotion capacity, and the existing literature argues for the importance of partnerships for improvement in NCD prevention (Hunter et al., 2019; McQueen, 2013; Marmot & Bell, 2019). Another strength of this definition is that it clearly applies to building Health Promotion capacities for NCDs because the definition mentions that building capacity is important in other sectors, which is a very important issue in the prevention of NCDs. A third strength is that it refers to partnership as a component of capacity-building: ‘commitment to health improvement in health and other sectors’. Developing partnerships is a central component of capacity-building because partnerships can improve the resources for building capacity, reduce duplication/prevent wastage and reduce the blame-game (Tennyson, 2011). Furthermore, Hawe et al. (1997) specified three dimensions of capacity-building: i) health infrastructure or service development, ii)
programme maintenance and sustainability and iii) problem solving capability of the organisations or communities.

A weakness of Hawe et al.’s (1997) definition is that it does not include multiple within-country levels. Health Promotion theory points to the importance of coordinated action at multiple country levels, and therefore suggests that Health Promotion capacity is required at the national, regional, local or at community, individual, organisational, programme or system levels. An improved version of Hawe’s definition would refer to country levels.

In regard to capacity building approaches, Crisp et al. (2000) explained that there are four approaches for capacity-building that countries can adopt for sustainable health promotion development. These are: i) a top-down organisational approach, which might begin with changing agency policies or practices; ii) a bottom-up organisational approach (e.g., provision of skills to staff); iii) a partnerships approach, which involves strengthening the relationships between organisations and multi-sectoral partnerships and action to build health promotion capacity for preventing diseases and improving the social determinants of health; and iv) a community organising approach, in which individual community members partner to form a new organisation or join existing ones to improve the health of community members.

2.4.3.2. Health Promotion capacity development

Recent developments have seen a move away from the traditional concept of ‘capacity-building’, which focused on technical training, towards a more developmental approach, referred to as ‘capacity development’ (Battel-Kirk & Barry, 2011). The differences between the two terms and the underlying concepts of each can be understood from the following definition from UNDP (2009, p. 54):

‘Capacity building commonly refers to a process that supports only the initial stages of building or creating capacities and is based on an assumption that there are no existing capacities to start from. It is, therefore, less comprehensive than capacity development’.
Bolger (2000) described the concept of capacity development given by the Canadian International Development Agency (CIDA) as complex. CIDA defined capacity development as “a process by which individuals, groups, organizations and societies enhance their abilities to identify and meet development challenges in a sustainable manner” (Bolger, 2000 p.4). CIDA further explains the capacity development approach as an intangible dimension of development that enables the system to act strategically in using and generating resources in an efficient, effective and sustainable manner in order to satisfy the needs and improve the Health Promotion capacity as the long-term result (Bolger, 2000).

CIDA (2000) outlined four different approaches to capacity development: i) the organisational approach, focused on building capacity at the level of individual organisations; ii) the institutional approach, which focuses on the processes and rules that govern socioeconomic and political organisation in the society at large; iii) a systems approach, which emphasises the interdependencies among social actors and the need to promote capacity-building in a holistic way; and iv) a participatory process approach, which emphasises ownership and participation as fundamental elements of capacity development.

2.4.4. The need for Health Promotion capacity-mapping

The fifth Global Conference on Health Promotion, held in Mexico City in June 2000, emphasised the importance of developing Health Promotion plans of action. Many countries have a Health Promotion vision, goals and strategies included in national policies, or have a standalone Health Promotion policy (Battel-Kirk & Barry, 2011). Progress, however, is uneven (Battel-Kirk & Barry, 2011; Battel-Kirk et al., 2009), and a number of countries (e.g., Oman) still have no strategic plan of action implemented specifically for Health Promotion. So as not to waste time, effort and resources in implementing interventions blindly, it is preferable first to ensure that any particular intervention will work for a particular country. Here, it is important to start with strategic planning and capacity-mapping before any actions are undertaken (Aluttis et al., 2014; Van den Broucke, 2017; Catford, 2005; Mittelmark et al., 2006; WHO, 2010a). This is consistent with LaFond et al. (2002), who refer to a capacity map as a representation of
the current status of capacity in a system or organisation, in an individual or a community, independent of, or prior to, any specific capacity-building intervention.

It has been argued that to develop and implement Health Promotion approaches and strategies, it is necessary first to map the capacity for Health Promotion in countries or regions (Aluttis et al., 2014; Beaglehole & Dal Poz, 2003; Catford, 2005; Battel-Kirk & Barry, 2011; Lafond et al., 2002; LaFond & Brown, 2003; Milen, 2001; Mittelmark, 2006).

It is not recommended to attempt to build Health Promotion capacity in any country without first undertaking Health Promotion capacity-mapping to assess what capacities already exist, how well they are developed and how well they link together. This helps to avoid actions that could lead to waste of resources and effort. Mapping of capacity prior to building and development actions is more likely to lead to a successful, effective, efficient and sustainable health system (Aluttis, 2014; Battel-Kirk & Barry, 2011; LaFond et al., 2002; LaFond & Brown, 2003; Milen, 2001; UNCED, 1992). Aluttis et al. (2014, p.41-42) conceptualised the process of capacity-mapping as the first step in the process of building Health Promotion capacity: ‘The first step is to perform a mapping of the existing situation, upon which a plan or strategy can build’. LaFond et al. (2002, p. 3) stated:

‘Mapping is the initial step in the design of capacity building interventions and provides a framework for monitoring and evaluating their effectiveness. Capacity mapping is useful to planners because it makes explicit the assumptions underlying the relationship between capacity and health system performance and provides a framework for testing those assumptions’

Mapping the Health Promotion capacity of a country allows the establishment of ‘identifiable needs’ (Battel-Kirk & Barry, 2011) and identification of ‘capacity gaps’ in a country. Battel-Kirk and Barry (2011, p.19) argued that, ‘all countries have “identifiable needs” in Health Promotion, considering that, as, Mittelmark et al. (2007) suggests, there is no reference to over-capacity in Health Promotion in any country’. There is no over-capacity in Health Promotion possibly because Health Promotion typically has very low funding (Abdul Rahim et al., 2014; Catford, 2005; WHO, 2018).
There are different definitions of capacity-mapping. For example, according to Aluttis et al. (2014), the definition is ‘a prior analysis to identify which capacities already exist, how well they are developed, and how well they link together as a system’ (Aluttis et al., 2014, p. 38). This definition provides three important points for mapping capacity. First, it points out that capacity-mapping assesses capacity that already exists. Second, it assesses the stage of development of the capacity, and third, it assesses how well the capacity domains are related to one-another in order to enable improvement in Health Promotion capacity. This definition also pinpoints that the capacity-mapping should happen before the process of capacity-building. Capacity-mapping is usually undertaken to provide a baseline measure, or in some cases a benchmark, against which improvements in capacity can be planned. This is how it has been used by WHO and other agencies. Battel-Kirk and Barry (2011, p. 18), based on Mittelmark et al. (2006), defined capacity-mapping as ‘an approach identified to measure current status in Health Promotion capacity as a baseline for assessing progress’. Mittelmark’s definition of the Health Promotion capacity map is simple, short and easy to understand.

The objectives of Health Promotion capacity-mapping have been discussed by multiple authors. Frequently, the goal is to assess what is already in place. As mentioned above, to Aluttis et al. (2014), the objective of capacity-mapping is to find which capacity already exist, the stage of development of any such capacity and how capacity domains relate to one another. Alternatively, Mittelmark et al. (2006) argue that one of the objectives of Health Promotion capacity-mapping is to assess the stage of development of Health Promotion policies, institution, programmes and practices. According to LaFond et al. (2002), the objective is to identify untapped resources. A second objective of capacity-mapping is guide recommendations. Mittelmark et al. (2006) stated that the map can be used as a policy tool for policy management. Consistent with Mittelmark, Catford’s (2005) purpose of building Health Promotion capacity is to provide evidence that can help policy- and decision-makers to build the necessary financial and technical support for implementation of effective Health Promotion interventions for the prevention of NCDs and to provide strategic vision and goals for the future. The third objective is to strengthen the Health Promotion capacity and public health services, which will in turn improve the health system. Both Bagley and Lin (2009) and Aluttis et al. (2014) have
argued that improving public health and Health Promotion capacity will strengthen and empower the ability of the health system to deliver effective, efficient and sustainable services. The final objective of mapping is to use the map as an evaluation or monitoring tool for building effective Health Promotion capacity. Catford (2005) refers to the use of mapping to ‘evaluate and monitor Health Promotion capacity’, while LaFond et al. (2002, 2003) described it as a critical step in developing a ‘monitoring and evaluation’ plan. In the same vein Joffres et al. (2004) outlined how the process could measure the changes in capacity-building initiatives, while Hawe et al. (1997) referred to capacity-mapping as a way to monitor the outcomes of Health Promotion programmes to evaluate how much work has been done so far and to develop strategies for future work.

Capacity-mapping is used to help with forward planning to build and develop capacity (Battel-Kirk & Barry, 2011). The Health Promotion ‘map’ is used as essential baseline information to establish the baseline capacity and inform strategic planning for addressing gaps, and for measuring the impact of capacity-building interventions over time. It is deployed as a cost-effective analysis to prioritise Health Promotion interventions in order to improve health in the long term (Gaudin et al., 2019). Mittelmark (2006) explained that the map can measure specific components or domains and identify whether policies, programmes, institutions and practices are in place to guide recommendations about what remedial measures should be taken (Mittelmark et al., 2006). Examples in which a capacity map has been used to measure specific components include the workforce which was assessed by Battel-Kirk and Barry’s (2011) ‘Scoping study Health Promotion workforce capacity and education and training needs in low- and middle-income countries’, or a particular health area, for example NCDs, as in Alwan et al.’s (2001) ‘Tool to assess the capacity for NCD prevention’. In other instances, it may assess the capacity at specific levels, such as in organisations, communities or the whole system (LaFond et al. 2002; LaFond & Brown, 2003; Hawe et al., 1997, 2001). Capacity-mapping could be at the national level such as the European HP-Source.net (Mittelmark et al., 2006; NSW, 2001; LaFond et al., 2002; WHO, 2010a; WPR, 2005) or national and regional levels such as in the work of Aluttis et al. (2014). Other purposes for Health Promotion capacity-mapping are to identify where investment is required by
international agencies and donor organisations or to identify good Health Promotion practices.

Mittelmark et al. (2006) described how capacity-mapping has been undertaken at the national level in Europe by WHO HP-Source.net since 2000 as a consortium of European organisations. Approaches to capacity-mapping in Canada include large- and small-scale international collaborations to map capacity for sustainable development. The efforts of the US in mapping the Health Promotion capacity have included state-level mapping of capacity to prevent chronic diseases and reduce risk factor levels. Mapping of the Health Promotion capacity in Australia began with examination of the systems needed by the health sector to design and deliver effective and efficient Health Promotion and has now expanded to include community-level capacity and policy review. Health Promotion capacity-mapping in Korea and Japan was developed in collaboration with European efforts which present the usefulness of the international Health Promotion networks. According to Battel-Kirk and Barry (2011) during the mapping process in any country there is a need to document the ‘identifiable needs’ in Health Promotion for the country, especially in the context of Mittelmark et al.’s (2006) reference to there being no overcapacity in Health Promotion in any country.

Methods of capacity-mapping could be either quantitative (NSW, 2001) or qualitative (Bagley & Lin 2009) or could be mixed-methods (LaFond et al., 2002; LaFond & Brown, 2003; Catford, 2005, EMRO, 2010; WPR, 2005, Nam & Engelhardt, 2007). The European approach emphasises the need for multiple methods and the principle of triangulation (Mittelmark et al., 2006). Lafond explained triangulation as a method that examines results from various data-collection instruments and sources, thereby strengthening the findings (LaFond & Brown, 2003). Other methods discussed by Mittelmark et al. (2006) include a dialogue-based approach which is a qualitative method involving a review of the social, economic, culture, policy, institutional designs, training options, workforce and professional development issues of infrastructure of countries. Such an approach would require the mapper to review and analyse the country’s health, history, cultural and advocacy documents.
Mittelmark et al. (2006) explained some of the issues that a mapper faces when conducting a capacity-mapping exercise for Health Promotion. These include the need to decide which capacities need to be addressed before the development of a capacity-mapping tool. The mapper needs to decide what the capacity map will be about: systems, resources, competencies, interventions or plans. This is important to determine what Health Promotion infrastructure may be required. In addition, before developing the mapping tool, it is important to decide on what to include, what to exclude and who to partner with. Other decisions that are needed include specifying who can be called a health promoter, since this needs to be clear, and how to map Health Promotion activities and interventions accomplished by people not in the formal Health Promotion workforce, such as teachers, parents or community leaders. It is also important to be clear at which level the capacity will be mapped; is it going to be at the national, the regional, the provincial or at all the three country levels? This is because the Health Promotion capacity level can differ not only between countries but even within the same country. Finally, a decision should be made on what data are needed; this is important as not all data are easily accessible. For example, data from the private sector can be difficult to access, as highlighted by WPR (2005).

Nam and Engelhardt (2007) stated that the criteria for a successful Health Promotion mapping tool include that it not only looks at the surface but also behind it, and that the ‘mappers’ have a good understanding of the tool as well as of Health Promotion. They argued that only when these criteria are met, can the results of the mapping exercise serve as a catalyst to change old structures. The evidence for how such mapping exercises lead to actual development of capacity on the ground and ultimately to public health improvement is discussed later in the discussion chapter (section 5.5.).

2.5. Critical Analysis of Health Promotion Capacity-mapping Frameworks

This section focuses on a comprehensive review of Health Promotion capacity-mapping frameworks to find the most suitable conceptual framework for this study. The review includes literature drawn from both the systematic and non-systematic literature review described in chapter 2.
2.5.1. Capacity-mapping frameworks

Creswell defines a conceptual framework as a system of concepts, assumptions, expectations, beliefs and theories that supports and informs a piece of research (Creswell, 2011). A conceptual framework is a set of coherent ideas or concepts organised in a manner that makes it easy to communicate them to others. Health Promotion capacity frameworks, based on single or multiple interventions, apply interlinked theoretical approaches to understand changes at several levels related to the planning, development, implementation and/or evaluation of the initiative. This includes identification of an intervention’s conceptual and operational elements, and its intended outcomes (Mahmood & Barry, 2014). This research adopted the definition of capacity-mapping frameworks for Health Promotion capacity found in LaFond’s work (LaFond et al., 2002, p.12; LaFond & Brown, 2003, p.9): ‘A framework links capacity related inputs, process, outputs and outcomes to performance of a system, organisation, health personnel or community’. This definition was chosen because the inclusion of the notions of input, process, output and outcomes highlight that strategic planning and evaluation underpins capacity mapping, building and development efforts. For example, in the framework of this research, the inputs are the set of resources including financial resources, human resources, infrastructure, organisational structure of the public sector, health-related laws, regulations and policies, information/communication systems, history and cultural factors. The inputs in the EMRO tool, meanwhile, were the programmes, policies, the infrastructure of the core of expertise and leadership, the information systems and the financing. The processes are the set of activities, interventions and strategies, practices or functions in which the input or resources are used in pursuit of the expected results. The processes in the EMRO tool were the planning, the programme delivery process and the process of professional development and training. The outputs, meanwhile, are the set of products anticipated through the execution of practices, activities and functions; these are the programmes and health promotion services resulting from the input and the process. The outcomes are the set of results that represent capacity, which are expected to improve as a result of capacity building interventions of polices, plans, legislation and regulations, programme delivery, information systems, financing, collaboration and partnerships.
The criteria to specify the most suitable framework for Oman were based on the literature, where individual authors developed or chose a framework according to their own specific criteria. For example, Mahmood and Barry (2014) developed a framework of Health Promotion capacity for a low-to-middle-income country, while Aluttis et al. (2014) identified frameworks addressing public health capacity-building at national and/or regional levels. The criteria applied were:

Criterion 1. Targeted at high-income countries: Oman is a high-income country (World Bank, 2016). The selected framework should therefore suit a high-income country (i.e., there should be a focus on non-communicable diseases and the social determinants of health).

Criterion 2. Easy to understand: The framework should be easy to understand, so that it can be easily used to create a tool to obtain valid information (e.g., there should not be more than two layers of domains/sub-domains and the language should be clear).

Criterion 3. Should include national and regional levels: Oman has interventions at both regional (sub-national) and national levels; therefore, the framework must work at both the national and regional levels rather than just one of these.

Criterion 4. Focuses on multiple health issues including NCDs: Oman has many health issues (e.g., non-communicable/communicable and new emerging diseases, road traffic accidents and natural disasters); therefore, the framework should cover many health issues. Note that when more health areas are covered, the framework is considered to be ‘health issue free’, which means that it does not tackle only one particular health issue (Catford, 2005).

Criterion 5. Covers more than one domain. To completely understand the Health Promotion capacity in Oman, the framework should cover many domains and should not be specific to one domain only (e.g., workforce competencies).

Criterion 6. Covers ‘gap’ domains: WHO-EMRO (2010) used a single respondent to evaluate capacity-mapping for Health Promotion in Oman. It was important to use a framework that covers the poorest or ‘gap’ domains. In the case of Oman, the gap domains (i.e.,
where all sub-components in a domain are rated poorly) by WHO-EMRO (2010) were 1) programme delivery and 2) partnership. These two domains (or similar) should be included in the selected framework.

Criterion 7. Basis for an earlier tool. The framework has been used to create a tool which has been used in a previous study. This shows that it is possible to implement a tool from the framework.

Criterion 8. Basis for an earlier GCC tool. The framework has been used as a tool specifically in GCC countries. Because many GCC countries have a similar cultural, political and health status as Oman, it is likely that a framework/tool used in one GCC country can be used in Oman.

A systematic (see Appendix A) and non-systematic (i.e., mostly through Google) literature search of the Health Promotion capacity-mapping frameworks was undertaken to find the optimal framework for Oman. The approach taken is described in Sections 2.2 and 2.3 in Chapter 2. The main findings of this search were the frameworks identified by Aluttis et al.’s (2014) comprehensive search and review of frameworks and the WHO (2010b/2013a) studies of capacity and response to NCDs. The eight criteria above were applied to the frameworks included in Aluttis et al. (2014) and WHO (2010b/2013a).

Aluttis et al. (2014) provided an advanced framework for systematically mapping the capacity in EU Member States to develop and implement public health policies and interventions, based upon a consensus-derived conceptual model of public health capacity which contained the most relevant dimensions for public health capacity at the national or regional level. In developing their framework Aluttis et al. (2014) conducted a comprehensive literature search to identify frameworks addressing public health capacity building. Aluttis et al. (2014) reported on eleven public health and Health Promotion capacity frameworks in their review. Their inclusion criteria were that the frameworks worked at the national or regional level; that they focused on public health capacity (and not public health competencies and performance); and were published after 1995 in English. Aluttis et al. (2014) aimed to develop a public health capacity framework that
contain the most relevant dimensions for public health capacity at the country or regional level.

The frameworks were analysed to identify the core dimensions of public health capacity. The dimensions were organised into a set of thematic areas to construct a conceptual framework which describes the most relevant dimensions for capacities at the national- or regional level. This resulted in seven domains, including: i) resources, ii) organisational structures, iii) workforce, iv) partnerships, v) leadership and governance, vi) knowledge development, and vii) country specific context.

Table 8 below presents some of the frameworks identified in Aluttis et al. (2014) and the titles and domains (components) used in developing those frameworks. Table 9 does the same for the WHO 2010b and 2013a frameworks, which included domains to assess both clinical and public health capacity. Table 10 reviews all these frameworks, including that developed by Aluttis et al. (2014), according to the eight criteria described above.
Table 8. Frameworks, titles and domains (adapted from Alutti et al., 2014)

<table>
<thead>
<tr>
<th>Source</th>
<th>Title of framework</th>
<th>Components of capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Health Department (2001)</td>
<td>A framework for building capacity to improve health</td>
<td>Organisational development, workforce development, resource allocation, partnerships and leadership</td>
</tr>
<tr>
<td>LaFond et al. (2002)</td>
<td>Mapping capacity in the health sector: a conceptual framework</td>
<td>Health system level capacity (inputs): Public/private composition and infrastructure, organisational structure of the public sector, health related laws, regulations and policies, information/communication systems, human resources, financial resources, history and culture and external environmental factors</td>
</tr>
<tr>
<td>PAHO/WHO (2007)</td>
<td>Public health capacity Latin America/Caribbean</td>
<td>Workforce, information systems, financial resources, institutional/organisational capacity, technologies</td>
</tr>
<tr>
<td>WHO-EURO (2012)</td>
<td>European action plan for strengthening public health capacities and services</td>
<td>Surveillance of population health, monitoring and response to health hazards and emergencies, health protection, Health Promotion, disease prevention, governance for health, sufficient/competent workforce, sustainable organisational structures/financing, advocacy, communication/social mobilisation and public health research</td>
</tr>
<tr>
<td>IUHPE (2002)</td>
<td>HP SOURCE. IUHPE. HP- Source; the Health Promotion discovery tool</td>
<td>Policy, tackling health inequalities, governance and accountability, local strategies, research, development and capacity of Health Promotion/public health function</td>
</tr>
<tr>
<td>Catford (2005)</td>
<td>Health Promotion capacity wheel</td>
<td>National leadership, joined up government, programme delivery, national partnerships, professional development, performance monitoring, sustainable financing and national policies and plans</td>
</tr>
<tr>
<td>Alwan et al. (2001)</td>
<td>Assessment of national capacity for NCD prevention and control</td>
<td>Health indicators, policies and operational plans, legislation, information systems/ statistics, structure/financing of prevention and treatment, national guidelines, available services, human resources, role of NGOs, monitoring and evaluating and drug availability</td>
</tr>
<tr>
<td>Source</td>
<td>Title</td>
<td>Components of capacity</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>WHO 2010b</td>
<td>Assessing national capacity for the prevention and control of non-communicable diseases</td>
<td>i) Public health infrastructure for NCDs, ii) Status of policies, strategies and action plans, iii) Health reporting/ information systems, surveys and surveillances, iv) Health system capacity for NCD prevention, early detection, treatment and care within the PHC system and v) Health Promotion partnerships and collaboration.</td>
</tr>
<tr>
<td>WHO 2013a</td>
<td>Country profile of capacity and response to non-communicable diseases (NCDs)</td>
<td>i) Public health infrastructure, partnerships and multi-sectoral collaboration for NCDs, ii) status of NCD-relevant policies, strategies and action plans, iii) health information systems, surveillance and surveys for NCDs and iv) health system capacity for NCD prevention, early detection, treatment and care within the health system.</td>
</tr>
</tbody>
</table>
### Table 10. Review of frameworks by the eight suitability criteria

<table>
<thead>
<tr>
<th>Conceptual Framework</th>
<th>Criteria 1</th>
<th>Criteria 2</th>
<th>Criteria 3</th>
<th>Criteria 4</th>
<th>Criteria 5</th>
<th>Criteria 6</th>
<th>Criteria 7</th>
<th>Criteria 8</th>
<th>Number of criteria met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluttis et al. (2014)</td>
<td>Y: this framework was developed for EU Member States to develop and implement public health policies and interventions</td>
<td>No: very advanced to Oman context Comprehensive long questionnaire with 135 quantitative &amp; 35 qualitative items dimension</td>
<td>Y: include National and Regional levels</td>
<td>No: only health promotion</td>
<td>Y: describes seven domains</td>
<td>Y: Covers programme delivery and partnership Aluttis et al. (2014)</td>
<td>N: not used yet</td>
<td>N: not yet known in Gulf region because it is highly advance level for the GCC situation</td>
<td>Four</td>
</tr>
<tr>
<td>NSW Health Department (2001)</td>
<td>Y: Targeted at Australia, targeted at countries with a high standard of Health Promotion capacity</td>
<td>N: The domains/sub-domains are very complex, and the sub-domains are difficult to achieve. Only suitable in a well-established system.</td>
<td>N: Does not address capacity issues at regional/national policy levels (essentially, it is setting- or situation-based within an organisation/community)</td>
<td>N: Disease is not mentioned in the components or sub-components</td>
<td>Y: Five domains are covered (NSW Health, 2001)</td>
<td>N: Covers collaboration (called ‘partnerships’) but not programme delivery (NSW Health, 2001)</td>
<td>N: Nine checklists are used to monitor performance (Indicators to Help with Capacity-building in Health Promotion) (Hawe et al., 2000), but these were made before the framework was developed</td>
<td>N: Never been used as a tool in GCC</td>
<td>Two</td>
</tr>
<tr>
<td>LaFond et al. (2002)</td>
<td>N: This framework is for ‘Developing countries’ (LaFond et al., 2002)</td>
<td>N: Multileveled and multi-layered system (LaFond et al., 2002)</td>
<td>N: Only national (LaFond et al., 2002)</td>
<td>N: There are no health issues mentioned clearly (LaFond et al., 2002)</td>
<td>Y: Ten domains (LaFond et al., 2002)</td>
<td>N: Covers programme delivery but not collaboration (LaFond et al., 2002)</td>
<td>N: Indicators were developed/reviewed by Brown et al. (2001), but these were made before the framework was developed</td>
<td>N: Never been used as a tool in GCC</td>
<td>One</td>
</tr>
<tr>
<td>PAHO/WHO (2007)</td>
<td>N: This is focused on low- and middle-income countries (PAHO/WHO, 2007)</td>
<td>N: The framework was quite complex</td>
<td>Y: Has been used at national and subnational levels (PAHO/WHO, 2007)</td>
<td>Y: Communicable and non-communicable diseases are mentioned (PAHO/WHO, 2007)</td>
<td>Y: There are six domains (PAHO/WHO, 2007)</td>
<td>N: These two domains are not covered</td>
<td>Y: Ten tools have been developed to measure different aspects of capacity</td>
<td>N: Never been used as a tool in GCC</td>
<td>Four</td>
</tr>
<tr>
<td>WHO-EURO (2012)</td>
<td>Y: This is about strengthening Health Promotion in Europe, which consists mainly of high-income countries (WHO-EURO, 2012)</td>
<td>N: The framework involves ten components with 93 sub-components involving member states and WHO regional offices and partners</td>
<td>Y: National and subnational levels (regional and local) are included (WHO-EURO, 2012)</td>
<td>Y: Includes focus on communicable, non-communicable, mental and emerging health issues (WHO-EURO, 2012)</td>
<td>Y: There are ten domains (WHO-EURO, 2012)</td>
<td>N: These two domains are not covered</td>
<td>Y: There are about 900 tools used to measure these 10 domains</td>
<td>N: Never been used as a tool in GCC</td>
<td>Five</td>
</tr>
</tbody>
</table>
### Table 10. Review of frameworks by the eight suitability criteria (continued)

<table>
<thead>
<tr>
<th>Conceptual Framework</th>
<th>Criteria 1 Targeted at high-income countries</th>
<th>Criteria 2 Easy to Understand</th>
<th>Criteria 3 Should include National and Regional levels</th>
<th>Criteria 4 Focuses on many health issues including NCDs</th>
<th>Criteria 5 Covers more than a single domain</th>
<th>Criteria 6 Covers two gap domains</th>
<th>Criteria 7 Basis for an earlier tool</th>
<th>Criteria 8 Basis for earlier Gulf Country Cooperation tool</th>
<th>Number of criteria met</th>
</tr>
</thead>
<tbody>
<tr>
<td>IUHPE (2002)</td>
<td>Y: This is targeted at Europe</td>
<td>Y: although no information on sub-domains has been provided</td>
<td>Difficult to obtain information on this framework</td>
<td>Y: Involved under domain of programmes and strategies</td>
<td>Y: There are nine domains here (Mittelmark et al., 2006)</td>
<td>N Although there is information about programme delivery e.g. ‘local strategies’ (Aluttis et al., 2014) or ‘Programmes and strategies’ (Mittelmark et al., 2006), partnerships were not mentioned clearly as a domain</td>
<td>Y: Online</td>
<td>N: Never been used as a tool in GCC</td>
<td>Four</td>
</tr>
<tr>
<td>Alwan et al. (2001)</td>
<td>Y: For both high- and low-income countries because it was used in 191 countries</td>
<td>Y: The framework includes only 11 domains and no sub-domains</td>
<td>Y: There is a question about provincial health surveys</td>
<td>N: Only covers NCDs</td>
<td>Y: 11 domains</td>
<td>N: Two domains are not covered</td>
<td>Y: There is a framework</td>
<td>Y: It was implemented in EMRO and Oman is one of the EMRO countries</td>
<td>Six</td>
</tr>
<tr>
<td>WHO (2010b)</td>
<td>Y: Has been used in high- and low-income countries</td>
<td>Y: The framework includes only five domains and no sub-domains</td>
<td>Y: Included</td>
<td>N: Only NCDs</td>
<td>Y: Five domains</td>
<td>N: Covers only collaboration for NCDs prevention and control</td>
<td>Y: See Assessing national capacity for the prevention and control of non-communicable diseases (WHO 2010b)</td>
<td>Y: Tool has been used in GCC</td>
<td>Six</td>
</tr>
<tr>
<td>WHO (2013a)</td>
<td>Y: Has been used in high- and low-income countries</td>
<td>Y: The framework includes only four domains and no sub-domains</td>
<td>Y: Included</td>
<td>N: Only NCDs</td>
<td>Y: Four Domains</td>
<td>N: Covers only collaboration for NCDs prevention and control</td>
<td>Y: Tool (Country profile of capacity and response to non-communicable diseases (NCDs))</td>
<td>Y: Tool has been used in GCC</td>
<td>Six</td>
</tr>
</tbody>
</table>
2.5.2. Review of the frameworks

Following a detailed analysis (see Table 10 above), four frameworks were found to be most suitable for this study. The first was Catford’s (2005) Health Promotion capacity wheel framework where all eight criteria were achieved. The second was Alwan et al.’s (2001) assessment of national capacity for a non-communicable disease prevention framework, which met six criteria. The third and fourth were the WHO frameworks (2010b, 2013a) for capacity for prevention and control/response to NCDs, which are very similar to each other, and achieved six criteria. Thus, the frameworks of Catford (2005), Alwan et al. (2001) and the WHO (2010a; 2010b; 2013a) were used to produce a tool for this study. Catford’s (2005) framework helped to assess the Health Promotion capacity, whereas those of Alwan et al. (2001) and WHO (2010b, 2013a) helped to assess the capacity with respect to non-communicable diseases in Oman. All of these frameworks have been previously used as sources of capacity-mapping tools in Oman. These four frameworks were critically analysed to develop a new tool, the Oman Health Promotion capacity-mapping for non-communicable diseases (Oman CMHPI-NCD-2017). To create the best tool, it was necessary to understand the frameworks in more detail, including their weaknesses and strengths.

The frameworks of Catford (2005), Alwan et al. (2001) and the WHO (2013a) are reviewed below in more detail. WHO (2010b) will not be reviewed because it is so similar to that of WHO (2013a). The similarities were as follows: i) both asked about the existence of a department for NCD prevention, ii) neither considered socioeconomic factors, iii) both asked about PHC services for NCD preventions, iv) both included questions about collaboration, and v) both included plans, policies and risk factors for NCDs. The only difference between WHO (2010) and WHO (2013) was in the first domain of public health infrastructure for NCDs, which was improved in the 2013 questionnaire by including partnerships and multi-sectoral collaboration in the title ‘public health infrastructure, partnerships and multi-sectoral collaboration for NCDs’, while in WHO (2010b), domain five partnerships and collaboration were mentioned under the heading ‘Health Promotion, partnerships and collaboration’. The next section discusses these four frameworks.
Aluttis et al.’s instrument and framework was not chosen for this study as it was found to be a very advanced tool for Oman at the time of the study. Moreover, Aluttis et al.’s instrument met only four of the eight criteria as shown in table 10. These criteria were as follows: Aluttis et al.’s instrument was targeted at high-income countries. It covers the National and Regional levels and covers more than one domain including the two gap domains of programme delivery and partnership. On the other hand, Aluttis et al.’s instrument assessed only health promotion and public health capacity and not health promotion capacity for NCDs. The instrument was developed for EU Member States to develop and implement public health policies and interventions but had not previously been used as a basis for earlier Gulf Country Cooperation tool.

2.5.2.1. Catford (2005) framework: National Health Promotion Capacity Wheel

WHO, in partnership with the Royal Government of Thailand, organised the Sixth Global Conference in Bangkok in August (2005). The conference was entitled ‘Policy and Partnership for Action: Addressing the Determinants of Health’ and called on all countries to build capacities for Health Promotion. The conference sought to achieve a set of ambitious outcomes, which were as follows: i) Frameworks and strategies for sustainable and integrated Health Promotion directed at tackling health challenges and their determinants and managing globalisation, ii) models and methods for policy development and partnership building for Health Promotion, iii) examples of successes and lessons in addressing the social, economic and environmental determinants of health, iv) strategic tracking indicators, v) global monitoring, reporting and capacity-building initiatives for enhancing Health Promotion, and vi) energised and committed participants and partnerships from diverse sectors and all WHO regions for carrying forward the recommendations of the conference.

Catford (2005) developed a mapping framework for the WHO Bangkok meeting to map Health Promotion capacity at regional and country levels. Catford observed that there is uncertainty and a general lack of information about the extent of the global and national Health Promotion capacity (Catford, 2005). Three areas were identified as requiring attention to fill the gaps in understanding Health Promotion capacity: i) an agreement on the scope
and definitions of what to measure, ii) a valid global system to collect the data consistently, and iii) a mechanism to present the information in a way that compels a policy response. Importantly, he argued that the mapping exercise needs to be ‘health issue free’ so as not to impose the perspective of a developed on the findings. The aim of Catford in developing the framework as a “health issue free” (Catford, 2005) was to make the framework applicable for any health problem, either communicable or non-communicable, and even to make the framework suitable to any health promotion problem or issue, not necessarily a disease, such as road traffic accidents, natural disasters or poverty, as explained in criterion 4. Catford’s ‘health issue free’ domains are as follows:

i) National policies and plans: National government policies and plans for Health Promotion priorities, which embrace the underlying concepts of the five Ottawa Charter strategies. These should cover a number of Health Promotion priorities for the country or be presented as separate policies for these priorities. The strategies should be clear and include: i) healthy public policy, ii) personal skills/education, iii) supportive environments, iv) community strengthening, and v) reorienting health services. The Health Promotion dimensions should go beyond the treatment services and clinically oriented secondary prevention programmes.

ii) National leadership: Core of expertise and leadership within the national MOH for Health Promotion development, coordination and partnerships. ‘Core of expertise’ refers to an identifiable ‘Health Promotion’ unit/section/centre/department within the Ministry or a group described differently but with similar functions that are explicitly stated. Access to external advisers both within and outside government is also important.

iii) ‘Joined-up’ government or collaborative mechanisms within the government for implementing Health Promotion policies: This includes coordinating mechanisms within the MOH and across the national government for policy development and implementation planning for Health Promotion priorities. This should allow different units within the ministry to cooperate for different Health Promotion activities (e.g., nutrition and primary care services, substance use and mental health services, active living and aged care services). In
addition, different departments and national agencies within the government should cooperate around the economic, social and environmental determinants of health. The collaboration mechanisms should be effective in supporting collaboration for Health Promotion (e.g., health with education/agriculture/transport).

iv) Programme delivery: Delivery structures and mechanisms for Health Promotion priorities at the national and/or sub-national levels, including support for inter-sectoral partnerships. These concerns defined organisational unit(s) with responsibilities and accountabilities for the delivery of Health Promotion programmes and capacity-building initiatives. Such delivery could be located at national and/or sub-national levels according to the needs of the country. The development and maintenance of partnerships is key to this domain, including generating links with the private sector.

v) National partnerships: National partnerships among NGOs, civil society, the private sector and government to implement Health Promotion priorities. This includes providing resources for the implementation of Health Promotion interventions which result in the improvement of determinants of health (Marmot & Bell, 2019) and for strengthening Health Promotion capacity particularly in the areas of planning, implementation, monitoring and evaluation of Health Promotion plans (WHO, 2013).

vi) Professional development: National-level advanced education and training programmes and a professional association for Health Promotion practitioners, policymakers and researchers. This should include postgraduate training programmes to develop leadership, planning, management and evaluation in Health Promotion, such as Diploma/Masters in Health Promotion, Masters of Public Health (with strong Health Promotion components) and advanced professional development courses. Such programmes are different from focused skills training courses for specific workers (e.g., nurses and community leaders) at the local level. To support and safeguard high standards of practice, an independent professional association is required, which can also act as an advocate for change. A large number of
Health Promotion managers, practitioners and researchers from the country should be members.

vii) Performance monitoring: National-level research and evaluation and information systems to track and report on health indicators relevant to the Health Promotion policy, priorities and programmes. This would include a research and evaluation resource at the national level to inform evidence-based practice and to assess the impact of Health Promotion programmes. A responsive information system is required to monitor progress at the national level with respect to Health Promotion programmes focusing on health issues (e.g., nutrition) and/or settings (e.g., in schools). Data could be collected at the sub-national level and then assimilated nationally to provide information for policy, planning and evaluation.

viii) Sustainable financing: Transparent and sustainable sources of public financing for Health Promotion priorities at the national or sub-national levels. This could comprise a number of public funding sources, including direct government allocations, hypothecated taxes (taxes collected for a specific purpose) or social/health insurance. The financing should be quantifiable in order to be able to monitor changes in expenditure over time.

Catford (2005) proposed a scale of ‘stages of development’ with specific descriptions for each stage that can be assessed at various levels within the country (i.e., national, regional and provincial levels) to monitor changes in the Health Promotion capacity over time. The scale of stages of development is as follows:

A: Fully implemented: The activity is completely in place and working well for all the Health Promotion priorities at the national level.
B: Partially implemented: The activity is partially in place and now in operation for some, or all, of the Health Promotion priorities at the national level.
C: Actioned: Work has started but it is too early to assess the impact or outputs.
D: Under development. This means that there has been a national commitment to implement the activity, and that work is under way to develop it.
E: Being considered: The activity is being considered for implementation, but no firm commitment has been given yet at the national level.

F: Not currently actioned: The activity has either not been considered or has been rejected for implementation at this level.

When applying the Catford (2005) approach, the information collected is plotted in the form of an eight-spoked steering wheel (a spider-gram) and analysed to assess the country’s Health Promotion capacity status (see Figure 4). The size and shape of the wheel or plot indicates the various stages of the developing capacity in a country.

Figure 4. The National Health Promotion Capacity 'Wheel' (Catford, 2005)
Different countries will be at different stages of development, but a simple plot will indicate whether the wheel is small or distorted. In line with the Bangkok Conference theme of Policy and Partnership, the wheel can broadly be categorised into four quadrants according to the two continuums of inside/outside government and policy/partnership focus. The domains falling between the four quadrants according to the two continuums of inside/outside government and policy/partnership focus are intended to offer a deeper understanding of the existing capacity in terms of national policy and partnerships. To further improve the impact of this tool, Catford (2005) suggested developing a set of consistent measurement criteria at the global and national levels to monitor changes over time and conduct inter-regional or cross-national comparisons (Catford, 2005; Crisp et al., 2000; Ebbesen et al., 2004).

The Health Promotion capacity wheel is ‘health issue free’; thus, it is appropriate for a broad range of countries with different health profiles. The strengths relevant to this study include that it considers: i) activities inside government, which are related to activities that are mostly under direct line management control of the government, ii) activities outside government, which relates to activities that are mostly outside of the direct line management of the government but can be assisted and supported by the government, iii) policy-focused activities, which relates to activities that are more oriented towards policy development to support Health Promotion interventions and capacity-building, and iv) programme delivery and partnership focused activities. These activities are more oriented towards partnership development to support Health Promotion interventions and capacity-building, which is a ‘gap’ area in the Oman health capacity (WHO-EMRO, 2010). The weaknesses of the Catford Framework for use in the current study include: i) the framework does not focus on non-communicable diseases and ii) there may be possible misunderstanding or conceptual misinterpretation of Health Promotion terms and domains due to cultural and language barriers (therefore, the tool should be translated to the country’s national language).
The Catford framework (2005) has already been used in a number of tools as follows: i) WHO-WPR-2005, ii) Nam (2007), and iii) WHO-EMRO-2010a.

2.5.2.1.1 The WPR (2005) capacity mapping tool

Capacity-mapping for the Western Pacific Region (WPR) was undertaken for the first time between June and July 2005 (WHO-WPR, 2005). The study considered the stage of development of eight interdependent capacity domains that comprise the national capacity for Health Promotion together. The project described in WHO-WPR (2005) was undertaken to document the infrastructure and capacities that exist for Health Promotion and how they are being secured and financed. The tool was composed of eight Catford (2005) domains plus a further thirty-five items to collect national and subnational level data. Strengths and weaknesses in Health Promotion capacity were found across the seventeen WPR countries. The strength of the tool was that it enabled analysis of associations between country Health Promotion capacity and specific variables, such as health expenditure and GDP. The weaknesses included that some questions in the questionnaire were compound in terms of their construction and framing (e.g., Q1.1 asked for a single compound judgement of stage of development about three different policy areas that are likely to differ in their stage of development - tobacco, nutrition and physical activity). This made it difficult to provide a reliable answer. Another weakness was the use of different terms for the same thing (e.g., ‘Health Promotion’ and ‘public health sector’). Some questions caused confusion in relation to terminology; for example, Q3.1 and Q3.2 introduce the terminology of the ‘public health sector’, which was confusing as this represents a shift in terminology from Health Promotion and could be interpreted as the publicly funded part of a health sector. The framing of some questions was complex and made answering them difficult for some country respondents. For instance, Q4.3 asked for an assessment of the ‘use of combinations of intervention strategies in different settings across different age groups for delivery of HP activities (intervention strategies include empowerment, development of conducive environment, reorientation of services and advocacy for health)’.
Validity and reliability checks were not reported. In the conclusions, WHO-WPR (2005) called for improvement of the questionnaire design and construction. This included changes to the terminology employed to make it easier to understand, avoiding the use of compound questions, and avoiding complexity in the framing of the questions.

2.5.2.1.2 The Korean Health Promotion capacity map

Nam (2007) used two international capacity-mapping tools to assess the Korean situation, namely HP-Source (Mittelmark et al., 2006) and the Health Promotion Capacity Profile (HPCP) tool (Catford, 2005). The identified strengths of the HPCP in this project were as follows: i) the A-F options for the stages of development were helpful when they are clearly understood, ii) asking questions that were applicable to the implementation approaches of Health Promotion, such as ‘use of combinations of intervention strategies in different settings’ was a strength because Health Promotion programmes are diverse in nature and thus require multi-sectoral action which is beyond the health sector. Weaknesses were also reported in the Korean tool: i) language was an obstacle to understanding, ii) Health Promotion means a different thing to different people depending on the language, culture and sector of employment, for example academics interpret Health Promotion in differently to health workers, iii) the question on the Ottawa Charter was not fully explained, iv) issues to improve Health Promotion capacity were not addressed, including, for example, whether evaluation mechanisms were coordinated, whether professional education and continuing education were positively evaluated by participants or whether the existing guidelines were useful for the Health Promotion workforce, v) the tool could not capture the country’s Health Promotion capacity because the participants should be topic-specific experts, and vi) considerable resources were required to apply the tool (time, manpower, skills, money), and such resources are often limited.

2.5.2.1.3 The WHO-EMRO (2010) capacity mapping tool

The World Health Organization Regional Office for the Eastern Mediterranean (WHO-EMRO-2010) carried out a survey in the EMRO region as part of a collective approach to assess the existing capacity in Health Promotion planning, programme implementation, financing and
cross-sectoral collaboration in the different countries of the WHO-EMRO region. The tool was adapted to local conditions in the region because the capacity for Health Promotion in different countries was considered to be at different levels (WHO-EMRO, 2010). The tool included the eight Catford domains, and thirty-five items similar to those in the WPR tool, to collect national and subnational level data. After consultation within the Regional Office for the Eastern Mediterranean, a short-expanded (mid-sized) version of the tool was disseminated in English and French to twenty-two EMRO countries. The single respondent in each country was contacted to answer the questionnaire in the form of reports (more information about the EMRO tool can be found in the tool development section below). The report (WHO-EMRO, 2010) explained the process, challenges, interpretation of the results and summary of the results for the countries, and each country could compare the Health Promotion capacity situation in the past to that in the present.

The key strengths of the WHO-EMRO 2010 tool were: i) information was verified in the majority of the countries, ii) individual narrative reports were prepared and there was a written report to highlight the countries’ major strengths and weaknesses with regard to their Health Promotion capacity, iii) there were both quantitative and qualitative findings, and iv) it was possible to plot results graphically using the scoring criteria for responses of individual countries. However, some questions had too many parts, both in the heading and in the sub-questions, resulting in lack of clarity on what parts of the question were being answered, and thereby reducing reliability and validity. For example, see question 1 below, the italicised parts of the question show multiple parts in the heading and subsections:

1.1 There are available policies/legislations/regulations at the national, regional, provincial and/or local levels (availability of completed or draft documents is enough for verification) on:

1.1.1 Promotion of healthy lifestyles, such as reduced consumption of tobacco products and fatty, sugary or salty food and increased physical activities
1.1.2 Addressing socioeconomic determinants such as increased access to clean and safe environment, universal health services, universal education and employment opportunities

2.5.2.2. The National capacity for NCD prevention and control framework

In 2000, the high burden of NCDs was of great concern to the WHO after the World Health Report on NCDs in 1999 showed that NCDs contributed to almost 60% (31.7 million) deaths and 43% of the global burden of diseases in 1999 (Alwan et al., 2001). The World Health Organization reacted to the threat of NCDs by declaring the prevention and control of NCDs as a priority in the WHO programme of work (Alwan et al., 2001). In 2000, a report on the global survey for prevention and control of NCDs was developed and endorsed by the World Health Assembly. This report included an assessment of national capacity for NCD prevention and control carried out by the Management of NCDs Department at WHO headquarters, with collaboration from the NCD departments in six WHO regional offices (Alwan et al., 2001). This report was coordinated by Dr Ala’ din Alwan, who was the Director of the Management of Non-Communicable Diseases (MNC) Department. Dr Ala’ din was assisted by Dr A. Mandil and Dr D. Maclean.

The first important positive element of the framework is that it focused on treatment as well as prevention of NCDs. The focus on treatment is important because: i) NCDs need to be treated and not just prevented, ii) the framework includes human resources, which are very important in the prevention and control of NCDs, and iii) the framework includes ‘role of NGOs’ as a domain. NGOs are very important in tackling NCDs because NCDs require actions beyond the health sector itself.

The weaknesses of Alwan et al.’s (2001) framework, however, were that the framework did not include collaboration as a separate domain. Including collaboration as a separate domain is necessary because prevention and control of NCDs requires multi-sectoral collaboration. The framework did not include a domain for social determinants of health. This is a gap
because causes of NCDs are found beyond the health sector. A third weakness is that the domain ‘availability of national guidelines’ was separate from the domain ‘policies and operational plans’. Because guidelines are often a type of ‘policy’, the framework would be simpler if these domains were combined. Conversely, the framework includes ‘structures of prevention and treatment activities’ and ‘financing of prevention and treatment activities’ in a single domain. Structures and financing are often two very separate activities and they should therefore be separated into different domains. A further weakness of this framework is that Health Promotion is not mentioned directly.

2.5.2.2.1. WHO 2013 country profile of capacity and response to NCDs

WHO carries out periodic global country capacity surveys to assess the capacity of countries to respond to NCDs. The first three were conducted in 2000, 2005 and 2010. The fourth and most recent survey was conducted in 2013. Countries were asked to provide detailed information about their capacity to prevent and control NCDs. The intention of the survey was to assess the progress since the 2010 survey and to determine countries’ current strengths and weaknesses in terms of NCD-related infrastructure, policy response, surveillance and health systems’ response. The overarching purpose was to identify gaps in prevention and control efforts and to assist with future planning. The components or domains of this survey were: i) public health infrastructure, partnerships and multi-sectoral collaboration for NCDs, ii) status of policies, strategies and action plans relevant to NCDs, iii) health information systems, surveillance and surveys for NCDs, and iv) health system capacity for NCD prevention, early detection, treatment and care within the health system.

The strengths of the WHO (2013) framework were that it included: i) the public health infrastructure for prevention and control of NCDs, which enables assessment of the department of NCDs (if it exists), human resources and financing for the prevention of NCDs. In other words, it can assess the input for prevention and control of NCDs, ii) partnerships and multi-sectoral collaboration for the prevention of NCDs because NCD management and prevention is a task that goes beyond the health sector, iii) policies, strategies and action plans for the four main NCDs, which determine objectives, targets and strategic actions, iv)
policies, strategies and action plans for preventing the risk factors of NCDs (i.e., unhealthy diet, physical inactivity, smoking and consuming alcohol), v) health information systems such as surveillance and surveys relevant to the prevention of NCDs which can be used as a database on the prevalence and incidence of NCDs, and vi) early detection, treatment and care within the health system since screening is important to assess those at high risk and commence early treatment. The weaknesses of the WHO (2013a) framework were that it did not include social determinants for prevention and control of NCDs, ‘the causes of the causes of NCDs’, or the term Health Promotion. The term Health Promotion should be included because it is a strategy to manage NCDs. The framework also did not address financing, and this should be included because is necessary to allocate resources for the prevention and control of NCDs optimally.

2.5.2.2.2. Summary of framework review

From the above analysis, Catford’s Framework was chosen as the most suitable to map the Health Promotion capacity, while the three frameworks of the WHO 2001, 2010b and 2013 were the most suitable for mapping the NCD-related capacity in Oman. Thus, these four frameworks were used together to develop the “new tool for Oman” for NCDs prevention.

2.6. Outline of the Capacities that are Required to Organise Effective Health Promotion

To strengthen health promotion role there is a need for building capacity through a ‘health promotion lens’. This requires a better understanding of the specific capacities that are needed, and of the training facilities, career opportunities, and professional organisational support that must be mobilised to establish these capacities and to accelerate the strengthening of public health services strategies (Van den Broucke, 2017).

Aluttis et al. (2014) and Van den Broucke (2017) noted that the development of health promotion capacity-building strategies is similar to the process of developing strategies to strengthen public health capacity. They both need to start with mapping existing capacity in order to build a plan or strategy that can improve the gap areas in the available capacity.
The Health promotion capacity which is needed to be built and strengthened in all countries includes policies and plans pertaining to health promotion, core of expertise in health promotion, collaborative mechanism within government, programme delivery, partnerships among NGOs, health promotion professional development, information systems, and health promotion financing domains according to Catford framework (Catford, 2005). Another framework which could be used as theoretical guide for any country to set up their own public health capacity assessment irrespective of their context or geographic origin is that of the Aluttis et al.’s (2014).

Aluttis et al. (2014) identified seven common core domains among the frameworks which can be used for assessment of public health capacity and health promotion. These domains integrate all reoccurring dimensions such as resources, organisational structures, workforce, partnerships, leadership and governance, knowledge development and country-specific context. Despite most of these domains being included in the new Omani tool, Aluttis et al.’s instrument was not chosen for this study because it did not meet the criteria set out in advance for the choice of instrument. Aluttis et al.’s framework covered only four of the eight criteria, which were as follows: i) targeted at high-income countries; ii) national- and regional-level measures; iii) focused on a broad range of health issues including NCDs; iv) covering more than one domain. On the other hand, Aluttis et al.’s framework and instrument were not easy to understand by the participants at the time of the survey, as there was no organisational structures yet implemented, and there was no leadership and governance for public health and health promotion. Aluttis et al.’s framework and instrument did not cover all the gap domains in Oman particularly in the area of NCDs. Moreover Aluttis et al.’s instrument was not used as the basis for an earlier tool that was implemented. Finally, Aluttis et al.’s instrument was not specifically used as the basis for an earlier Gulf Country Cooperation (GCC) tool.

International organizations, Ministries of Health as well as several research projects increasingly include capacity building in their activities in order to enhance impact and performance in their programmes (Aluttis et al., 2014). There are emerging needs to shift the
focus from influencing the health of the population towards enabling systems and networks to conducting public health actions in a self-determined and sustainable manner. In any system the concept of enhancing the capacity of a system is required to strategically planned in order to prolong and multiply health the health outcomes achieved by the health promotion interventions (Aluttis et al., 2014; Van den Broucke, 2017).

Strengthening of the public health capacity is achieved through developing capacities and strategies through a ‘health promotion lens’ that aims at strengthening health promotion capacity in any country (Van den Broucke, 2017). Such a process of development, however, first requires a plan or strategy based on a mapping of the existing situation. This indicates the need to identify which capacities already exist, how well they are developed, and how well they link together as a system (Aluttis et al., 2014; Van den Broucke, 2017).

2.7. Mapping the Capacity of Health Promotion Interventions for NCDs
A comprehensive mapping of the Health Promotion capacity for the prevention of NCDs has not been specifically carried out before in any country. This is possibly because Health Promotion interventions (for NCDs) are not known to many people, and because Health Promotion terminology is not well understood. For example, Nam & Engelhardt (2007) stated that the ‘misinterpretations of the terminology of Health Promotion is due to cultural and language barriers’. Nevertheless, mapping the capacity of Health Promotion for NCDs has been recommended by many researchers and policymakers, such as: McQueen (2013); Mittelmark et al. (2006); Battel-Kirk and Barry, (2011); Aluttis et al. (2014); WHO, 2010a; 2013c; 2016; 2017; 2018a; Marmot and Bell (2019); Abdul Rahim et al. (2014); Catford (2005); LaFond et al. (2002); Alwan (2001) and Hawe et al. (1997). Multiple methods are needed for capacity-mapping (Mittelmark et al., 2006). Up until now, there has been no Health Promotion capacity-mapping project specifically focused on NCDs (McQueen, 2013) for any country in the world. This study will be the first to attempt to perform Health Promotion capacity-mapping for NCD prevention.
2.8. Research Objectives

i. To examine the level of Health Promotion knowledge, skills, commitment, systems, structures and leadership that exist in Oman to determine the interventions that promote health, including policies and organisational and community-level strategies) and that are integrated into the existing structures for preventing NCDs in Oman.

ii. To determine gaps where further Health Promotion capacity is required to prevent and control NCDs in Oman.

iii. To provide recommendations for strengthening the existing government support for Health Promotion capacity directed at preventing and controlling NCDs in Oman.

Mapping the capacity of Health Promotion interventions for NCDs is a broad topic (McQueen, 2013), which combines these substantive areas: i) Health Promotion, ii) NCDs, and iii) capacity-mapping. These three areas affect health systems in any country (Dean et al., 2014; McQueen, 2013). The fact that this study is the first to cover all three fields is a significant element in its novel contribution to scholarship in this area.

2.9. Conclusion

This chapter reviewed the potential role of Health Promotion capacity in preventing NCDs and improving health. Capacity-mapping for the prevention of NCDs can help provide decision makers with an accurate picture of the existing situation at various levels, helping them to plan and implement effective Health Promotion strategies to prevent NCDs and to improve health. In light of the findings from this literature review, three specific objectives were formulated to develop a methodology for mapping Health Promotion capacity in respect to the prevention of NCDs in Oman.
3. Research Methods

This chapter first presents the research design adopted. The second section explains the steps undertaken to accomplish the phase two quantitative study and explains how the measurement tool used was developed, and the final section explains the steps involved in the phase three qualitative study.

The research question for this study was:

What is the Health Promotion capacity for preventing and controlling NCDs in Oman?

The aim was to examine the capacity for Health Promotion to prevent NCDs in Oman, with three objectives:

i) to examine the level of Health Promotion knowledge, skills, commitment, systems, structures and leadership that exist in Oman to determine those interventions that promote health (including policies and organisational and community-level strategies) and that are integrated into the existing structures for preventing NCDs in Oman;

ii) to determine the gaps where further Health Promotion capacity is required to prevent and control NCDs in Oman, and

iii) to provide recommendations for strengthening the existing government support for Health Promotion capacity directed at preventing and controlling NCDs.

3.1. Background and Rationale of the Study

Non-Communicable Diseases are a global public health crisis reaching epidemic proportions worldwide, and there is an ample evidence to suggest that the burden of non-communicable diseases is already having a profound effect on the health of population in epidemiological transition such as Oman and Gulf Cooperation Council Countries in the Eastern Mediterranean region (EMRO) (WHO, 2014; 2018). NCDs are responsible for more than 60% of all deaths in the Eastern Mediterranean region which include the GCC Countries and in
some countries it reached higher to 85% of all deaths (Oman 2050 NCDs, 2012; WHO, 2012; 2018).

Deaths from the NCDs are increasing worldwide as they are prevalent in both developing, as well as developed countries. The NCDs have Socio-economic impacts they are not only a health problem but a development challenge as well. It forces many people and countries into poverty due to the toll of the NCDs expenditures for treatment which is increasing day after a day. Non-Communicable Diseases also have a large impact on productivity. They threaten progress towards the UN Millennium Development Goals and post-2015 development agenda (IUHPE, 2018; Van den Broucke, 2017).

Poverty is closely linked with NCDs. The rapid rise in NCDs is predicted to impede poverty reduction initiatives, particularly by increasing household costs associated with health care. Vulnerable and socially disadvantaged people will get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services (WHO, 2013, 2018; McQueen, 2013; Van den Broucke, 2017; Hunter et al., 2019; Marmot & Bell, 2019). In many countries, tobacco and alcohol use, unhealthy diet, insufficient physical activity and exercise, occur both in higher and lower income groups. However, high-income groups can access services and products that protect them from the greatest risks while lower-income groups can often not afford such products and services (WHO, 2011, 2013, 2014, 2018).

Most premature NCDS deaths are preventable. Of the 57 million lives lost to NCDs in 2016, 15 million were premature and avoidable. Premature NCDs deaths can be significantly reduced through government capacity building and development, by developing policies reducing tobacco use, harmful use of alcohol, unhealthy diets and physical inactivity, and delivering universal health care (WHO, 2018). These strategies are proven to be the right way to overcome the growing devastating impact of the NCDs (WHO, 2014, 2016; Van den Broucke, 2017; Hunter et al., 2019; Marmot & Bell, 2019). There is a lack of capacity to act
but not necessarily a lack of commitment, therefore policies, plans and strategies of Health Promotion capacity mapping of non-communicable diseases are required to help bridge the gap between the present resources and the required capacities. WHO and the Council of Health Ministers of the GCC countries both emphasise the importance of assessing the burden of NCDs in the region, and to study the social and economic consequences of NCDs prevailing in the country. This assessment is an important tool to improve the process of health promoting public health policy planning, prioritising alternatives and decision-making leading to the most cost effective and appropriate interventions.

The cost of treatments for non-communicable diseases is very high and can lead to impoverishment for people, families and countries. Health Promotion capacity interventions to prevent and control NCDs (i.e., Policies and plans pertaining to Health Promotion, Core of expertise in Health Promotion, Collaborative mechanism within government, Program delivery, Partnership among NGOs, Health Promotion Professional Development, Information systems, Health Promotion financing) will help secure the socio-economic level of the individuals, families and countries as it can provide the highest return on investment (WHO, 2010, 2011, 2013; Van den Broucke, 2017; Hunter et al., 2019; Marmot & Bell, 2019).

Health Promotion capacity for preventing NCDs is the Health Promotion capacities that are available for preventing NCDs. All countries need to build Health Promotion capacity for control and prevent NCDs (WHO 2013, 2016, 2018; Van den Broucke, 2017; IUHPE, 2018). In order to evaluate a country’s capacity of Health Promotion interventions that tackle NCDs, we need to carry out Health Promotion capacity mapping exercise for NCDs prevention (Mittelmark, 2006; Aluttis et al., 2014; Van den Broucke, 2017). Mapping Health Promotion capacity interventions for NCDs prevention involves evaluating what Health Promotion capacities are available for to prevent and control NCDs by engaging in a survey of capacity and interviews (WHO, 2001, 2010; McQueen, 2013; Aluttis et al., 2014; Van den Broucke, 2017).
The study used mixed-methods approach, recommended by many authors (LaFond et al., 2002, 2003; Mittelmark et al., 2006; McQueen, 2013; Aluttis et al., 2014; Van den Broucke, 2017) which includes the integration of evidence from both quantitative and qualitative sources.

In summary, NCDs are a major and growing health problem among Omani population. In order to be clear about what needs to be done, the current status of Health Promotion capacity in Oman is required. Mapping the Health Promotion capacity will serve to help identify where Health Promotion development is required and will act as a baseline for assessing progress.

3.2. Study Design

This study used a mixed-methods approach to answer the research question and to achieve the research aim and objectives. A mixed-methods approach has previously been recommended and applied in Health Promotion capacity-mapping research (LaFond et al., 2002, 2003; Mittelmark et al., 2006; Nam & Engelhardt, 2007; McQueen, 2013; Aluttis et al., 2014; Samir, 2014). Quantitative research has been used to document Health Promotion capacity and determine the gaps in Health Promotion capacity. On the other hand, qualitative research has been used to gain a greater understanding of the capacity and the gaps in Health Promotion capacity and to find pathways towards closing these gaps. A mixed-methods approach has not been previously employed to investigate Health Promotion capacity for NCDs. This study employed an explanatory sequential mixed-method design:

‘in which the research begins by conducting a quantitative phase and follows up on specific results with a second phase. The second qualitative phase is implemented for the purposes of explaining the initial results in more depth and it is due to this focus on explaining results that is reflected in the design name’

(Morgan, 1998) as cited by (Creswell, 2011, p. 82).
3.2.1. Study phase two

The quantitative phase started by examining the best existing frameworks to develop the measurement tool. There are many Health Promotion capacity-mapping frameworks, and in order to identify the most appropriate framework to best fit the needs of Oman (Mittelmark et al., 2006), each framework was assessed against eight criteria as shown in table 10 section 2.5.1.

3.2.1.1. Rationale for a new tool and the development process

The capacity for health promotion for non-communicable diseases in Oman has not previously been mapped. The following questionnaire were considered the most suitable for mapping HP capacity for NCDs in Oman:

1) Health Promotion Capacity Mapping; which EMRO adopted to partly map aspects of health promotion for NCDs in Oman (WHO, 2010a).

2) Assessing national capacity for the prevention and control of non-communicable diseases (WHO, 2010b)

3) 2013 country profile of capacity and response to NCDs (WHO, 2013)


All four of these questionnaires have partly mapped aspects of Health Promotion for NCD prevention appropriate for Oman. These questionnaires have a number of limitations. All four questionnaires were global questionnaires or focused on the entire EMRO region, meaning that questions were not focused specifically on Oman and its individual situation. The possibility of comparing directly to other studies needed to be balanced against the aim of conducting a indepth capacity mapping that was relevant to Oman, and would provide the best opportunity to contribute to the improvement of Health Promotion in Oman.
3.2.1.1. The need for specific Omani-focused questions

Some questions needed to be more specific or focused for Oman. Mortality and morbidity in Oman is different from that of other WHO countries. Oman’s mortality due to cardiovascular diseases is particularly high (WHO, 2010b, p.36; Health Vision 2050, 2014), suggesting that there needed to be a greater focus in the questionnaire on this topic. Second, WHO-EMRO (2010a) suggested that ‘Partnership’ and ‘Programme Delivery’ were two areas that are particularly weak in Omani Health Promotion. These also needed to be included in the developed tool. Third, the tool needed to address previously identified NCD capacity weaknesses (e.g., WHO, 2013a).

3.2.1.2. The need to improve the methodologies adopted in previous studies

All four of the source questionnaires previously collected data from a single individual within the countries involved. In Oman, however, there is no real focal point for Health Promotion. Health Promotion activities are distributed across ministries/institutions/sectors, and there is poor centralisation of information. The potential weakness of relying only one expert to provide information on Health Promotion has been pointed out in a number of reports (e.g., UNICEF, 2008; WHO 2010a, p. 6; WHO-WPR 2005, p. 7). The process of collecting data from only one expert also produced threats to validity. WHO (2010a, p.6) states that ‘independent validation for many survey items was not always possible’. It is likely that independent validation was not obtained in some cases because only a single topic-specific expert was available data. To counter this weakness, it is preferable to distribute the questionnaire to many key informants to obtain more reliable information (Mahmood & Barry, 2014).

3.2.1.3. Reliability and validity

To increase the reliability and validity of the data collected by going beyond the ‘single respondent’ approach, this study instead distributed questionnaires as part of a survey to participants throughout Oman who were likely to be more familiar with programmes in their own ministries and sectors. This is what makes this research an innovative attempt at delivering a more reliable and valid mapping of Health Promotion capacity for NCDs in Oman.
In summary, the two previous questionnaires used in Oman (WHO-EMRO- 2010a; WHO, 2013a) were not specific enough, lacked detailed information and were not administered in an appropriate form or were out-dated. Their use would have therefore failed to provide reliable, up-to-date, and specific feedback on Health Promotion capacity-mapping to be used in the Omani context. Therefore, it was necessary to develop a new measurement tool.

3.2.1.2. Developing the tool for this study

The tool for this thesis was developed using the questionnaires of the frameworks that have been introduced above in section 3.2.1.1. Where appropriate, questions referred specifically to NCDs. This means that the term ‘non-communicable diseases’ was included in the question where necessary. New questions were added about NCDs that were not included in the original questionnaires. This allowed the current questionnaire to be more focused on NCDs. The multi-part (compound) questions referred to above were separated. The questionnaire was adjusted to fit the Omani system and the terms that are used in Oman were added (e.g., instead of the term ‘regional’ the term ‘governorate’ was used, and instead of the term ‘provincial’, ‘wilayat’ was used). In addition to being asked about national plans, key informants were also asked about programmes and risk factors at the governorate and wilayat level.

Extra questions were added on the plan of action for the four main NCDs (cardiovascular diseases, diabetes, cancer and chronic respiratory diseases); Health Promotion partnerships for the prevention of NCDs; Health Promotion programme delivery for the prevention of NCDs; and specific questions were added in two further gap areas (partnership and programme delivery) in Oman and four gap areas with respect to NCDs (cardiovascular diseases, diabetes, cancer and chronic respiratory diseases). It was initially intended to add questions about NCD risk factors that target different population sub-groups (children, women, adolescents and the elderly) to ensure that services are distributed equitably and effectively. This was not possible, however, due to the need to keep the length of the questionnaire manageable, which was a challenge (WHO, 2013a, 2010b, 2001, Alwan et al., 2002).
Three additional questions were added from Battel-Kirk and Barry’s (2011) IUHPE Scoping Study on Health Promotion Workforce Capacity and Training. These questions were included to create awareness and discuss Health Promotion, including disseminating the term Health Promotion and its meaning: ‘activities to improve health’, and also to help achieve the aim and objectives of the research as follows:

Q1. What term is most commonly used in Oman for activities to improve health? This question was added because understanding the exact meaning of health promotion in Oman is important. There is evidence of confusion about such terminology worldwide and, in Oman, more than 50% of health workers believe that health promotion is health education (WPR, 2005; Nam & Engelhardt, 2007; van den Broucke, 2017). The question also sought to provide background data relevant to the first research objective of this thesis, namely the desire to examine the level of health promotion knowledge, and health promotion structures in Oman.

Q2. Is Health Promotion reflected in national government policies including health policy in Oman? This question was added because Oman has no health promotion policies and leaders do not know that the policies they develop may in fact be health promoting. The researcher was trying to ascertain whether leaders and policymakers could identify health promotion policies, not only from the Ministry of Health but also other government departments and NGOs. Furthermore, this question sought to determine the extent and the ways in which health promotion activity informs government policies. This is important for the first and second research objectives.
Q3. Is there dedicated government funding for activities that promote health in Oman? In Oman there is government funding for all health activities, whether clinical or health education related, but there is no dedicated government funding for activities that promote health and public health prevention activities, and therefore the health budget is mostly spent on clinical activities and medication. This limits health promotion activities and programmes. The question also sought to provide background data relevant to the first research objective of this thesis, mainly in order to examine sources of financing and also to provide information relevant to the second objective of examining any finance gaps in health promotion in Oman.

The developed questionnaire was referred to as the ‘OMAN Capacity Mapping of Health Promotion Interventions for NCDs tool’. The introduction included background information on the aim and objectives of the study, and instructions on how to respond to the questions.

This new tool was designed to collect data from a purposively selected sample of topic-specific experts (who work in current Health Promotion activities in Oman), was focused on the four NCDs, was politically and culturally sensitive, included additional questions relevant to Oman and collected information on the national, regional (Governorate) and provincial (Wilayat) levels.

3.2.1.3. Designing the online survey

The Oman Capacity Mapping of Health Promotion Interventions for NCDs tool was distributed using the online survey aid SurveyMonkey because this enabled online data collection from a large number of participants who were geographically dispersed across Oman. This type of online survey is also a suitable method for a researcher who is not physically present in the country at the time of the study. Using an online survey is less expensive than sending questionnaires through the mail and built-in tools can make data management less complex. The design of the online questionnaire started in May 2016 and continued until March 2017, during which the Arabic version was also designed.
Participants must, however, be computer literate to answer survey questions online. In this research, all the proposed participants were experts in professional disciplines and were therefore very likely to be computer literate. In addition, they had access to the Internet in their workplaces and were likely to be fluent in both English and Arabic. The language used in this survey was English or Arabic according to the preference of the participants.

3.2.1.4. Pilot

A pilot study was conducted between 12 July and 19 August 2016 to test how participants responded to the Health Promotion capacity-mapping tool (questionnaire) in the Omani context. In the pilot study, questionnaires were sent to eleven participants in a number of ministries/sectors (e.g., MOH, Ministry of Social Development, WHO).

3.2.1.4.1. The aim and objectives of the pilot survey

The aim of the pilot survey was to improve the data collection tool. The objectives were: i) to find out how long it took to answer the questions, ii) to check whether participants were able to answer the questions, iii) to determine which questions were answered and not answered by participants, iv) to simplify and shorten the questionnaire where possible, based on feedback from participants, v) to identify which questions to exclude (e.g., questions which may cause stress, discomfort or anxiety), vi) to get feedback from the participants on whether the questionnaire was clear and understandable, vii) to get any other feedback about the questionnaire, (e.g., how to increase the likelihood of participants responding), and viii) to obtain initial results based on a small sample.

3.2.1.4.2. The pilot survey participants

Eleven participants were chosen across three sectors in Oman: MOH (n = 7), Ministry of Environment (n = 1); Ministry of Social Development (n = 1); Sultan Qaboos University (n = 1); NGO and private organisations (WHO) (n = 1). There were nine male and two female participants. Each participant received a questionnaire in a document sent by email and a request to fill out the questionnaire and to comment on the length of time taken to complete the questionnaire and the ease of understanding the questions and layout, give
recommendations about which questions to change, add or delete, and to comment openly about the questionnaire in general.

3.2.1.4.3. The response rate to the pilot survey

The response rate to the pilot survey was 64% or seven out of eleven participants. The suggestions of the participants about the questionnaire were equally, if not more, important than the response rate. Six participants completed the questionnaire, and one sent an email with an attached Word document containing the answers in the form of advice and recommendations. Four participants did not respond because one found it difficult to answer, another said that the questionnaire was for MOH staff and he worked in another ministry, the third said she was very busy and could not answer and the fourth never replied. Two of these six respondents gave specific comments directly in the questionnaire and returned this as an attachment. Five people provided more general comments either by email or face-to-face. Four people provided related documentation.

Participant suggestions were as follows: excluding the question about ‘loans’ because it is not applicable to Oman (e.g., ‘Using the national health account if available, or any available estimate, indicate the percentage of the total grants and loans from aid organisations spent on Health Promotion at the national level during the financial year 2003’). Some participants reported that the survey is a bit long and recommended making it shorter. Some participants were afraid to answer because they were embarrassed to show a lack of knowledge. The researcher thought the solution was to include a ‘don’t know’ response and add in the introduction the following: ‘This is not the type of survey where everyone should know everything’. Because the questionnaire of the pilot study was administered by means of a Word document, participants suggested that an online questionnaire would be better and easier to answer. They also suggested sending the questionnaire to the health and safety committee member(s) and to include more explanation of the purpose of the study. Participants suggested changing response options from the stage of development scale to yes/no/don’t know options. Many participants requested the addition of a definition of each domain, and they also suggested including more information about the aim and objectives of
the study adding the phrase ‘In Oman’ to every question. They also suggested that all questions be phrased as questions not as statements, and that the survey be distributed to policymakers as well as to other sectors (e.g., Ministry of Education). Some participants pointed out typographical errors in the English and grammar.

3.2.1.4.4. Adoptions following the pilot study
Based on the feedback from the pilot study, the questionnaire was adapted as follows: a detailed description of how to answer the questionnaire was included, more information was added on the purpose of the study, questions seeking to acquire personal identifiable information such as name and job title were removed so as to ensure that the survey was anonymous, and some question response options were changed from the stage of development scale to yes/no/don’t know. The typographical and grammatical errors in English were corrected, the questionnaire was made more Oman-specific and some questions that were not applicable to Oman were removed. Because some participants were not able to answer some of the questions, ‘Don’t know’ was added as one of the response options. It was decided that an Arabic version of the questionnaire should be developed by first translating to Arabic, and later translating back to English, which was completed by March 2017.

The pilot study was conducted to increase the validity and reliability by considering the cultural context of the questionnaire in Oman. Improvements included modifying the questionnaire to ensure that it could be completed in an acceptable time so as to maximise numbers of responses. The questionnaire was adapted to get more relevant responses and the questionnaire was tested for cultural and political sensitivity, understandability and relevance to Oman. Thus, the questionnaire was modified into an easier to answer, shorter questionnaire that contained Oman-specific questions, and that made every effort to ensure that the participants were able to answer the questions without stress, discomfort or anxiety. Overall, the effect of the changes was to improve the questionnaire by making the questions clearer, thereby increasing its applicability.
3.2.1.5. Reasons for non-response

Common reasons regarding why participants fail to answer all questions in a survey could include survey fatigue, which participants feel when answering questions that have become boring, tiresome and uninteresting, in addition to people feeling that they did not have anything useful to contribute to the research—either because of a lack of expertise or a lack of interest—and because of being overwhelmed by the amount of effort required or the feeling that they are wasting their time. Other reasons could include the environment of the participant at the time of answering the survey or the fact that the questions are too difficult to answer and unrelated to their specialty and experiences. In the case of questioning policymakers and leaders, a lack of transparency could be an important reason behind failure to answer; in other words, their desire to suggest that there are no problems with the system. One unavoidable reason is that some participants may be ‘too busy’ to participate (Si, n.d.).

Surveys need to be sufficiently appealing, and overall designs need to be attractive and exciting for the target group. Good planning of design and methods used for introducing the survey will help minimise or prevent any harm to participants. The answer choices need to be concise and in multiple-choice form (Si, n.d.). In addition, participants like to feel that they have made an impact by answering the survey, which will give them a sense of fulfilment. The researcher therefore needs to consider the following questions in the introduction to the survey: Why should participants take the survey? How long will it take? How many questions does it have? What will happen after the participants answer the survey? (Everett, 2013).

3.2.1.6. Steps followed to improve the response rate

The aim and purpose of the survey were explained in the introduction to the tool using the following statements:

‘This study aims to map the capacity for promoting health in Oman. This questionnaire is for all people who are working in any activities that promote health in Oman. This may include people working in the MOH, but also people working in any other sectors related to improving health’.
The background the study was explained as follows:

“Health Vision 2050” is Oman’s effort to visualise how the Omani health system should be up to the year 2050. In the process of reviewing the existing health system, national and international experts, as well as the public, have highlighted that “Health Promotion is of extreme importance” (Sultanate of Oman, 2014). This concern is reflected in the Oman Vision 2050 Synopsis of Strategic Studies (2015), where one of the chapters focuses on Health Promotion. Objective number eight is to monitor and evaluate the Health Promotion initiatives, services and policies in Oman. Little is currently known about initiatives that promote health and the overall Health Promotion capacity in Oman, however. Consistent with objective eight, the aim of this survey is to examine Oman’s capacity with respect to Health Promotion (with a focus on non-communicable disease). The main focus of this questionnaire is to examine the level of Health Promotion knowledge, skills, commitment, system, structure and leadership that exist for promoting interventions (including policies, organisational and community level strategies), which are integrated into the existing structures for Health Promotion in Oman’.

Instructions explaining how to answer the questions in the survey were given as follows:

‘Please read carefully the questions and possible answer choices (see “Stages of Development answer choices”) before you start to answer any question. It is expected that everyone in areas of work involved in promoting health should be able to answer some of the questions in this questionnaire. Everybody has specific areas of knowledge and expertise depending on their area of work. However, there is no need to worry if you do not know answers to some, or even many, of the questions. If you do not know an answer to a question, please choose “Don’t know”. Your participation in this questionnaire is completely voluntary and you may withdraw at any time. The questionnaire should take less than 45 minutes to complete. Thank you for taking the time to respond to this questionnaire’. 
The survey targeted all people working in any activity that promoted health in Oman. There were no criteria to identify experts in this survey other than the fact that the participant should be involved in activities that promote health. To ensure that these participants were involved in Health Promotion activities, demographic questions were included such as questions about their occupation and their area of expertise, as well as questions asking participants to choose any of the five Ottawa Charter Health Promotion strategic actions that they have used to improve health.

3.2.2. Ethics committee approval

The researcher applied for and received full research ethics committee approval for the conduct of phase two and phase three from both the Research Ethics Committee at the National University of Ireland and the Oman Research and Ethical Review & Approval Committee.

3.2.3. Target population

An expert is someone who has a broad and high level of competence in terms of knowledge, skill and experience through practice and education in a particular field (Gobet, 2015). In a more informal sense, an expert is someone widely recognised as a reliable source of knowledge, technique or skill, whose faculty for judging or deciding rightly, justly or wisely is accorded authority and status by peers or the public in a specific, well-distinguished domain (Ericsson & Staszewski, 1989). In this survey, experts were chosen to participate according to their experience and knowledge of the Health Promotion capacity for NCDs in Oman.

In general, mapping Health Promotion capacity using potentially expert participants has pragmatic benefits. These benefits include the ability to develop better Health Promotion activities via the acquisition of expert knowledge regarding what capacity exists and what are the gaps in this capacity. Research experts can lead to better ways of improving the Health Promotion services and can even inform the development of better Health Promotion systems (Hambrick et al., 2016). This will lead to better problem solving and effective,
efficient decision-making, and it can result in greater creativity within future research (Gobet, 2015).

Currently, a job description that refers to the ‘Health Promotion’ specialty has not been established in Oman. Bearing this in mind, the target population for the quantitative survey was people who were computer-literate public health workers: health policymakers, researchers and academics in public health, politicians involved in activities that promote health, key public health decision makers (such as heads of public health programmes), public health consultants, regional governmental authorities (i.e., Regional Director General), heads of hospitals, general practitioners and public health workers who work in activities that promote health on the individual and community levels (e.g., health educators and nutritionists). These potential participants are found in the MOH, other Government departments, NGOs and private organisations, so there needed to be sub-samples from each of these three sectors. All participants had access to the Internet and were able to answer the survey questionnaire online.

Contact information (i.e., email addresses, phone number and social media) of potential participants was obtained from secretaries of organisations from each of the three sectors. MOH email addresses were obtained from the Directorate General of Planning, Nutrition and Health Education departments. Other civil services’ emails were obtained from the relevant ministries. NGO and private sector email addresses were obtained from the WHO and from NGOs such as the Society for Public Health, the WHO, UNICEF, the UN and the Petroleum Development of Oman company (PDO). It was not possible to visit all the participants in person, but the researcher met about 65 people face-to-face in December 2016 to introduce them to the research and to inform them that they would receive a questionnaire online. Potential participants were also asked to pass the questionnaire to other people working in activities that promote health.
3.2.4. Data collection

After obtaining emails and other social media contact information from the secretaries, potential participants were contacted online and invited to participate in the survey (see Appendix B). Appendix E contains a link to the online survey and the request to forward (i.e., snowball) the email with the survey link to other colleagues working in the health-promotion related fields to increase the sample size. Based on a count of delivered emails and social media messages, invitations were sent to a total of 804 potential participants between 5 May and 5 June 2017. Links in English and Arabic were provided so that participants could answer the surveys according to their preferred languages. The recommendations of Burke and Hodgins (2015) were adopted to help improve the response rate. A reminder email was sent two weeks after the first email to increase the response rate (see Appendix F).

3.2.5. Data return, management and analysis

Data return started on 6th of May 2017 and was completed on 6th of June 2017. Data management is an administrative process that includes: i) acquiring, ii) validating, iii) storing, and iv) protecting and processing required data to ensure the accessibility, reliability and timeliness of the data for its users (Galetto, 2016). Data management started since the 5th of May with the preparation of an online secure SurveyMonkey survey and data. Collection of data starting on May 6th using SurveyMonkey in both English and Arabic.

Two datasets—English (n=118) and Arabic (n=188)—were exported from SurveyMonkey and combined to create the final merged file (n=306). Data were stored on a password-protected laptop. All the data was always backed up on both the university computer system and the researcher’s laptop, as well as with the statistician and in a flash memory with secured password.

A ‘preliminary analysis’ was conducted up to November 2017 in order to be ready for the December interviews of the qualitative study. Responses from the 306 respondents were analysed to get the means of the domain questions until the end of November 2017 using SPSS, as will be discussed in chapter 4. From October 2017 to November 2017 the data were
analysed and the mean of the means of the domains were calculated carefully but rapidly in order to allow creation of the Oman Health Promotion Capacity Interventions for NCDs wheel (see Figure 9) which was used to demonstrate the survey results to the interviewees in the qualitative study, which was conducted in December 2017. Further data analyses were undertaken in June 2018, September 2018 and March 2019 to present the data in posters for both the Health Promotion conference at NUI Galway in June 2018 and the 10th IUHPE conference in September 2018, as well as, in March 2019, for a manuscript being prepared for publication. In December 2019, data were examined for validity by comparing smaller and larger datasets (see section 4.1.5.10.). Final analysis was carried out for manuscript being prepared for publication on June 2020 before submission to the Health Promotion International journal.

3.3. Study Phase Three

The qualitative phase was planned to complement and validate the findings from the quantitative study and to gain a greater understanding of the Health Promotion capacity for preventing NCDs and the causes of gaps identified. The qualitative study was also used to find a pathway towards reducing these gaps by providing a deeper insight into the perspectives of the key informants and to bring policymakers’ voices to the forefront.

3.3.1. Study protocol

Based on the above aims, a qualitative study protocol was developed that included objectives, methods, target sample and a review of important documents about Health Promotion capacities with respect to NCDs. These documents are listed in Table 11 below. Prior to data collection, target sectors for the sample, and inclusion and exclusion criteria were determined. In addition, findings from the phase two survey to present to interviewees, interview schedules and domain-specific questions for each key informant were prepared.

3.3.2. Risks associated with Phase three

Specific risks associated with the qualitative study were identified, and confidentiality, consent forms and participant information sheets were prepared (in English and Arabic).
Please see Appendix C1 for the qualitative semi-structured face-to-face interview questions in English, Appendix C2 for the domain specific qualitative study questions in English, Appendix D for the participant information sheet for the qualitative study and Appendix E for the consent form for the qualitative study.

All participants in the qualitative study were assured that the data collected in the study would be treated confidentially, that the data would be pseudo-anonymised and that the researcher and research colleagues were the only ones who would have access to data.

3.3.3. Data collection

3.3.3.1. Semi-structured face-to-face interviews

The semi-structured interviews aimed to obtain policymakers’ general perceptions and knowledge about:

I. The Health Promotion capacity map—which was an output from the phase two survey
II. Determine gaps in the Health Promotion capacity in Oman, especially in the three domains (programme delivery, information systems and Health Promotion financing) which resulted from the quantitative study
III. Examine the eight domains of Health Promotion capacity in Oman with respect to gaps and solutions to overcome those gaps, and
IV. Obtain the participants’ suggestions for strengthening government supports.

Based on the breadth and depth of the data required, and the geographical spread of participants, as well as their busy professional lives, a semi-structured interview approach was considered most appropriate for these aims (Mittelmark et al., 2006; WHO, 2010a) and was applied in this study.

3.3.3.2. Sample selection

The sample for the qualitative study was purposive (i.e., a sample of ten participants was selected based on certain criteria relevant to the aims of the research). In this case, participants were key informants who are defined as knowledgeable experts in health policy
with the power to influence and to implement Health Promotion policies for control and prevention of NCDs in Oman. The key informants were also chosen according to their specialty in the eight capacity domains, with at least one expert specialised in each of the gap areas. For example, key health policymakers in Oman were senior health policy professionals in the area of NCDs such as director generals (DGs), regional authorities in the government, national health programme health managers, and senior government consultants. Senior level academics, researchers and senior practitioners were also included based on the recommendations of Catford (2005).

To meet the study aims participants were specialised in one or two domains, but they were also asked most of the seven questions in the interview schedule, except where they refused. In addition to the seven questions of the qualitative study, each participant was asked to answer one question in their speciality (please see Appendix C1 for the seven questions and C2 for the speciality questions asked in the qualitative interviews). Table 11 below presents the roles, reason for selection and domain of speciality for each of the ten participants interviewed in December 2017.
Table 11. Interview participants’ sector, role, reason for selection and expertise

<table>
<thead>
<tr>
<th>Sector</th>
<th>Role/Position</th>
<th>Reason for selection</th>
<th>Domain(s) of expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Senior level public health official in the area of Health Promotion and NCDs</td>
<td>To explore perceptions of Health Promotion capacity in the area of plans and policies</td>
<td>All</td>
</tr>
<tr>
<td>G</td>
<td>In primary care with experience working at the regional and provincial level</td>
<td>To explore equity and equality in regions and local areas</td>
<td>All</td>
</tr>
<tr>
<td>G</td>
<td>NCD Department official</td>
<td>To explore HP capacity for prevention of NCDs</td>
<td>3, 4, 5, 6</td>
</tr>
<tr>
<td>G</td>
<td>Community initiative department official</td>
<td>To explore HP capacity</td>
<td>2, 3, 4, 5, 6</td>
</tr>
<tr>
<td>G</td>
<td>Nutrition department official</td>
<td>To explore HP interventions in the area of healthy diet</td>
<td>1, 7</td>
</tr>
<tr>
<td>G</td>
<td>Senior level academic from Sultan Qaboos University</td>
<td>To explore how to improve academic training in HP for NCDs</td>
<td>6, 7</td>
</tr>
<tr>
<td>G</td>
<td>Senior researcher from Training Research Centre (TRC)</td>
<td>To find ways to bridge the gap in HP information systems and HP research in NCDs</td>
<td>7</td>
</tr>
<tr>
<td>G</td>
<td>Official from statistics department in MOH</td>
<td>To find ways to improve tracking HP indicators (behavioural indicators and NCD indicators)</td>
<td>7</td>
</tr>
<tr>
<td>NGO</td>
<td>Technical public health expert from WHO country office</td>
<td>To find more effective ways of establishing partnerships for HP capacity in Oman</td>
<td>1, 2, 3, 4, 5, 6, 7</td>
</tr>
<tr>
<td>G</td>
<td>PHC official with knowledge of Health Education and Community Initiative Department</td>
<td>To find effective ways of improving HP capacity for NCDs at regional and local area levels</td>
<td>1, 2, 3, 4, 5, 6, 7</td>
</tr>
</tbody>
</table>

Sector: Government (G); Non-Governmental Organisation (NGO)

3.3.3.3. Pre-interview preparation

Prior to developing the interview schedule, informants, key policies and documents were reviewed to extract the most relevant information regarding policies and strategic interventions. This was to help ensure that the interview questions were relevant and appropriate. The following six documents were reviewed so as to gain a better understanding of the health promotion capacities developed so far for the prevention of NCDs, as well as the obstacles and limitations in developing these capacities. Table 12 overleaf presents the key documents that were reviewed.
Table 12. Key Oman Health Promotion-related policy documents

<table>
<thead>
<tr>
<th>Document</th>
<th>Issues relevant to this study</th>
<th>Related interview questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five-year NCDs strategic plan (5th, 6th, 7th and 8th plans)</td>
<td>These plans include the policies and prevention, the activities and strategies, which have been implemented to prevent NCDs in Oman.</td>
<td>These documents familiarised the researcher with the policies and strategies implemented so far. These documents also familiarised the researcher with the strengths and weaknesses as mentioned in questions 5 and 6 in the general interview (see appendix C1) and also familiarised her with most of the domain-specific questions should the interviewee mention any of the documents in appendix C2.</td>
</tr>
<tr>
<td>Annual Statistical Health Reports for 2014, 2015 and 2016.</td>
<td>These documents were reviewed in order periodically to be familiar of the statistical data and updated policies and strategies of vision 2050, which implemented.</td>
<td>These documents helped in attaining information for most of the domain-specific interview questions in appendix C1 and C2.</td>
</tr>
<tr>
<td>Synopsis of strategic studies (Health Vision 2050), 2015.</td>
<td>This document was very useful as it contains a chapter explaining future NCDs plans for implementing vision 2050, and a chapter on health promotion.</td>
<td>This document helped in attaining information for most of the domain-specific interview questions in appendix C1 and C2.</td>
</tr>
<tr>
<td>Health Vision 2050 (2014)</td>
<td>This document explained the future road map for NCDs prevention up to 2050.</td>
<td>Helped in attaining information for most of the questions in appendix C1 and C2.</td>
</tr>
<tr>
<td>The proposed Health Promotion strategy 2014 Healthier Oman</td>
<td>This document explained the health situation and how Oman struggles in managing NCDs and gave some recommendations about how health promotion can prevent NCDs. It also explained in detail future strategies to prevent NCDs.</td>
<td>Helped in attaining information for most of the questions in appendix C1 and C2.</td>
</tr>
<tr>
<td>Nizwa Healthy Lifestyle Project Evaluation Report 2010</td>
<td>This document showed the progress in the indicators of the Nizwa lifestyle after implementing health promotion strategies and activities</td>
<td>This helped in the recommendations if the participants discussed project interventions and if the participant requested it be generalised among all other regions in Oman.</td>
</tr>
</tbody>
</table>
3.3.3.4. Method and steps for the qualitative study

Participants were contacted through a formal email requesting their participation, which was sent in the first week of December 2017. The email explained the purpose of the interview and requested a suitable time for the interview. The email also included the participant information sheet and the consent form. These were provided so that participants had the opportunity to review these documents and decide if they wanted to participate in the study. The consent form was signed when the interview was undertaken. The participants were contacted three days later by a phone call. If agreeable, a suitable time and place for the interview was arranged.

3.3.3.4.1. Response to the qualitative study

Six of the potential participants responded directly to the email requests with a proposed appointment time. The remaining four potential participants were contacted by the researcher, by going directly to their offices without an appointment to invite them to be interviewed. All four were very cooperative and started the interviews immediately. In all cases, the consent form was signed prior to the interview being undertaken.

At the beginning of the interview, the interviewees were given a summary of the results from phase one. The discussion centred on the eight domains for developing effective Health Promotion capacity, which were the themes of the qualitative study (see below). The topic-specific expert questions (see Appendix C2) depended on the area of specialty of each senior key informant. All interviews lasted for less than 45 minutes and were conducted in English according to the participants’ preference.

Eight of the participants were asked all seven general questions, as well as a question in their specialty domain(s). Two participants were specialised in all domains and were thus asked all questions. One participant did not wish to answer the full seven questions; instead, he only answered the domain specialty question. A second participant answered five of the seven questions as well as the specialty question but did not have time to answer the remaining two general questions.
Interviews were digitally recorded with an Olympus digital voice recorder and a backup recording was made with a Samsung phone voice recorder. After each interview, the digital recordings were directly transferred to a password-protected laptop. For security reasons, the files were deleted from the recorders as soon as they were transferred after each interview. The digital recordings were transferred on the same day of the interview.

3.3.4. Confidentiality

All ten interviews were conducted in December 2017. All the data collected in the study were treated confidentially, and all transcripts were pseudo-anonymised. All digital recordings and transcripts were coded to separate identities from actual data. Identifying information was not transcribed, and a code was used on the transcript instead, which can only be linked back to the identity of the interviewee by the researcher. All digital recordings were stored on a secure password-protected computer in a secure location.

3.3.5. Analysis of the interview data

This study employed a thematic template analysis, a specific form of thematic analysis used to analyse the interview data. This method involves an iterative process of organising textual data and developing a coding scheme based on a small subset of transcripts to produce an ‘initial template’ that can then be used to code other transcripts (King and Brooks, 2017). Template analysis was carried out iteratively from January 2018 with a final (fourth) template produced by August 2018.

3.3.5.1. Rationale for choosing template analysis

Qualitative researchers have developed a number of methods for examining textual data to understand human meaning and experience. Thematic analysis is a widely used method in qualitative analysis, involving the creation of themes associated with topics of interest. It has been defined as ‘a method for identifying, analysing, and reporting patterns (themes) within data’ (Braun & Clarke, 2006, p. 79). Thematic analysis is a general term for a number of styles of analysis including template analysis (Brooks et al., 2015), framework analysis and matrix analysis (Miles & Huberman, 1994; Nadin & Cassell, 2004). Template analysis is a specific
form of thematic analysis performed through a process of organising and analysing textual data according to themes that can be used in the context of evaluation, irrespective of the evaluation activity (Brooks et al., 2015).

In general, both template and thematic analysis are flexible. Template analysis is a technique which allows it to be adapted to the needs of a particular study (Brooks et al., 2015). Both template and thematic analysis share the approach of developing a hierarchical coding structure which does not exceed more than two levels of sub-themes in the thematic analysis, although the hierarchical coding structure of the sub-themes can run to four or more levels to capture the richest and most detailed aspects of the data in template analysis (Brooks et al., 2015; King et al., 2004, 2017) (five levels or more are permitted, but such granularity is not recommended so as to preserve the goal of attaining clarity in organising and interpreting the data). In thematic analysis, the task of defining themes occurs during the later phase of the process, while in template analysis, themes can be defined prior to the coding process (Brooks et al., 2015). In this study the a priori themes were the eight Health Promotion domains identified in the quantitative study.

Template analysis is easier and less time-consuming than thematic analysis, particularly in a small study such as this one, because the themes are already known and therefore the coding process involves filling the a priori developed themes with sub-themes and codes and developing themes at the end of the coding process. The initial template is applied to other transcripts as an iterative process for modifying and reaching a comprehensive representation and interpretation of data in the final version of the template. Further details on the development and application of the template approach are included in the results chapter in Section 4.2.1.

3.4. Conclusion

The study aimed to examine and map the existing capacity of Health Promotion in Oman. This includes knowledge, skills, commitment, system, structure, leadership and gaps where
further Health Promotion capacity is required. The study employed a mixed-methods approach to achieve these objectives.

Phase one was the literature review presented in chapter 2. In phase two, the Health Promotion capacity in Oman was mapped by utilising an adapted version of the capacity-mapping tool for Health Promotion developed by the World Health Organisation (WHO-EMRO-2010). The tool was based on eight Health Promotion capacity domains: policies and plans pertaining to Health Promotion, core of expertise in Health Promotion, collaboration, programme delivery, partnership, professional development, information systems and financing. The key informants for the mapping tool were selected purposively and included government employees involved in Health Promotion interventions in Oman.

In phase three, semi-structured interviews with policymakers and leaders who have the power to implement Health Promotion policy in Oman at the national and regional were conducted. Thematic template analysis of the interview data aimed to develop an understanding about the experts’ knowledge, perception and views of the Health Promotion capacity map and the gaps in capacity identified in the mapping study.
4. Results

This chapter contains two main sections. The quantitative results section (phase two) includes detail of response rates, reliability, demographic details of the participants and analysis of the quantitative results. The second section contains the qualitative results (phase three) based on the template thematic analysis of the interviews conducted. The recommendations provided by participants in the qualitative study are also presented.

4.1. Quantitative Study Results (Phase two of PhD)

4.1.1. Response rates

A total of 804 participants received the email directly, and 306 responded. There were 118 English responses and 188 Arabic responses. Out of the total respondents, 37 people (12%) were classified as ‘other’ occupation. As everybody in the original list of potential respondents had an occupation that was in the health area (i.e., not ‘other’), this means that these 37 people were part of the ‘snowball sample’. The maximum number of respondents from the original list was 306-37 = 269; therefore, based on the original list of 804 names, the maximum response rate was 100×269/804 = 33.46%.

4.1.2. Reliability

Cronbach’s alpha was calculated in order to determine the internal reliabilities for the stage of development questions in each domain. The reliabilities ranged from satisfactory to excellent (i.e., between 0.74 to 0.98). Reliabilities of the domains from Domain 1 to Domain 8 were 0.98, 0.89, 0.90, 0.90, 0.95, 0.74, 0.97 and 0.89, respectively (see Appendix G).

4.1.3. Demographic details of the participants

Demographic details of the participants are presented below.

4.1.3.1. Language used by participants

Participants responded to the survey in either Arabic or English. Table 13 below shows whether participants responded to the survey in Arabic or English.
Almost two thirds (61.4%) of the participants responded in Arabic, while the remainder (38.6%) responded in English. All responses were pooled for further analyses.

4.1.3.2. Language used by occupation

Participants were asked about their occupation using an open-ended question. Table 14 below shows the occupations of the participants grouped into seven categories.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>31.1</td>
<td>92</td>
</tr>
<tr>
<td>Public health specialist</td>
<td>25.3</td>
<td>75</td>
</tr>
<tr>
<td>Health director</td>
<td>10.5</td>
<td>31</td>
</tr>
<tr>
<td>Nurse</td>
<td>9.8</td>
<td>29</td>
</tr>
<tr>
<td>Academic</td>
<td>8.4</td>
<td>25</td>
</tr>
<tr>
<td>Health consultant</td>
<td>2.4</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>12.5</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>296</td>
</tr>
</tbody>
</table>

The three largest occupational categories were doctor (31.1%), public health specialist (25.3%) and other (12.5%). The remaining categories were health director (10.5%), nurse (9.8%), academic (8.4%), and health consultant (2.4%).

4.1.3.3. Area of particular expertise of the participants

Participants were asked their areas of expertise, which were categorised into four groups. Table 15 below presents participants’ areas of expertise.
Table 15. Area of particular expertise

<table>
<thead>
<tr>
<th>Area of expertise</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public health expertise</td>
<td>59.8</td>
<td>171</td>
</tr>
<tr>
<td>Clinical expertise</td>
<td>21.0</td>
<td>60</td>
</tr>
<tr>
<td>Academia</td>
<td>7.7</td>
<td>22</td>
</tr>
<tr>
<td>Other</td>
<td>11.5</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>286</td>
</tr>
</tbody>
</table>

The largest category of particular expertise was public health expertise, into which more than half of the participants (59.8%) fell. The remaining categories were clinical expertise (21.0%), other (11.5%) and academic (7.7%). The other category included people who had expertise that was not public health, clinical or academic expertise (e.g., expertise in engineering).

4.1.3.4. Work sector of the participants

Participants were asked which sector they work in (MOH, Government sector or non-government sector). Table 16 shows the number of participants who work in each sector.

Table 16. Participants by work sector

<table>
<thead>
<tr>
<th>Work sector</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Health</td>
<td>68.0</td>
<td>200</td>
</tr>
<tr>
<td>Other government sector</td>
<td>15.3</td>
<td>45</td>
</tr>
<tr>
<td>Non-government sector (NGO) and private</td>
<td>16.7</td>
<td>49</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>294</td>
</tr>
</tbody>
</table>

When participants were asked what sector they worked in, they chose one of three possible sectors. The largest work sector—chosen by two thirds of the participants—was the MOH (68.0%), followed by NGOs and the private sector (16.7%), and the smallest sector was other government sector (15.3%).

4.1.3.5. Involvement in Health Promotion activities

Participants were asked to write in an open-text field the activities they were involved in to improve health. These activities were categorised into Health Promotion activities and non-Health Promotion activities based on whether the activity fit with the Ottawa Charter’s five
Health Promotion action strategies. Participants were then categorised as involved in Health Promotion activities if at least one of their activities was a Health Promotion activity. The percentage of participants involved in Health Promotion activities was 94.5%, and thus, 5.5% were involved only in non-Health Promotion activities. Table 17 shows the percentage of the participants involved in Health Promotion activities versus those involved in non-Health Promotion activities.

**Table 17. Participants involved in Health Promotion activities**

<table>
<thead>
<tr>
<th>Activities</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Promotion activities</td>
<td>94.5</td>
<td>240</td>
</tr>
<tr>
<td>Non-Health Promotion activities</td>
<td>5.5</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>254</td>
</tr>
</tbody>
</table>

4.1.3.6. Ottawa Charter actions which participants use to improve health

Participants were asked to choose which of the five Ottawa Charter Health Promotion strategic actions that they have used to improve health. They could choose more than one answer. Table 18 shows the percentage of participants involved in the respective Ottawa Charter Health Promotion strategic actions.

**Table 18. Participants involved in Health Promotion strategic actions**

<table>
<thead>
<tr>
<th>Ottawa Charter Health Promotion strategic actions</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building healthy public policy</td>
<td>51.2</td>
<td>146</td>
</tr>
<tr>
<td>Creating supportive environments</td>
<td>55.8</td>
<td>159</td>
</tr>
<tr>
<td>Strengthening community action</td>
<td>57.2</td>
<td>163</td>
</tr>
<tr>
<td>Developing personal skills</td>
<td>63.9</td>
<td>182</td>
</tr>
<tr>
<td>Reorienting health services</td>
<td>56.8</td>
<td>162</td>
</tr>
</tbody>
</table>

*Multiple answers were possible*

Developing personal skills was chosen by the highest percentage of participants (63.9%), while building healthy public policy was chosen by the lowest percentage (51.2%).

Participants were categorised based on the number of Ottawa Charter actions they were involved in (see Table 18 above). Table 19 shows the percentages of participants who reported different numbers of Health Promotion strategic actions.
Table 19. Number of health promotion strategic actions participants are involved in

<table>
<thead>
<tr>
<th>Number of Ottawa Charter Strategic Actions</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>6.9</td>
<td>21</td>
</tr>
<tr>
<td>One</td>
<td>21.9</td>
<td>67</td>
</tr>
<tr>
<td>Two</td>
<td>21.9</td>
<td>67</td>
</tr>
<tr>
<td>Three</td>
<td>18.0</td>
<td>55</td>
</tr>
<tr>
<td>Four</td>
<td>11.1</td>
<td>34</td>
</tr>
<tr>
<td>Five</td>
<td>20.3</td>
<td>62</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>306</td>
</tr>
</tbody>
</table>

The percentages of participants reporting that they were involved in one or two Health Promotion activities were the highest (21.9% each), while the percentage of participants reporting that they were involved in four Health Promotion activities was the lowest (11.1%).

4.1.4. Most commonly used term in Oman for activities to improve health

Participants were asked to choose the term that was most commonly used in Oman for activities to improve health (see Table 20).

Table 20. Most commonly-used term in Oman for activities to improve health

<table>
<thead>
<tr>
<th>Term</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Promotion</td>
<td>50.3</td>
<td>85</td>
</tr>
<tr>
<td>Health Education</td>
<td>8.3</td>
<td>14</td>
</tr>
<tr>
<td>Public Health</td>
<td>36.1</td>
<td>61</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5.3</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>169</td>
</tr>
</tbody>
</table>

The most common term that was reported to be used in Oman for activities to improve health was the term Health Promotion (50.3%), followed by public health (36.1%) and health education (8.3%), while 5.3% indicated that they did not know.

4.1.5. Results: domains of Health Promotion capacity for NCDs

The following section shows the results related to each of the eight Domains.

4.1.5.1. Domain 1: Policies and plans pertaining to Health Promotion

Health Promotion reflected in national government policies
Participants were asked to identify in what way Health Promotion was reflected in Omani national government policies, including health policy. See Table 21 below.

**Table 21. Health Promotion reflected in national government policies**

<table>
<thead>
<tr>
<th>Policy approaches</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is stand-alone Health Promotion policy</td>
<td>5.6</td>
<td>8</td>
</tr>
<tr>
<td>Health Promotion is part of an overall health policy</td>
<td>46.9</td>
<td>67</td>
</tr>
<tr>
<td>There are Health Promotion elements in non-health policies</td>
<td>32.9</td>
<td>47</td>
</tr>
<tr>
<td>There is no reference to Health Promotion in health policies</td>
<td>7.7</td>
<td>11</td>
</tr>
<tr>
<td>No information available</td>
<td>7.0</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>143</td>
</tr>
</tbody>
</table>

Almost half of the respondents (46.9%) answered ‘Yes, Health Promotion is part of an overall health policy’ while a third (32.9%) answered ‘Yes, there are Health Promotion elements in policies other than health policy’. Fewer than ten (7.7%) responded: ‘No, there is no reference to Health Promotion in health policies’.

**4.1.5.1.1 Awareness of policies, legislation and regulations that promote healthy lifestyles**

Respondents were asked to choose one of the stages of development of available policies/legislation/regulations in Oman that promote healthy lifestyles. The subsections below present participants’ responses in relation to policies addressing the key risk factors of the four main NCDs.

**Reduce consumption of tobacco products at all levels**

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels that promote healthy lifestyles in relation to consumption of tobacco products (see Table 22).
Table 22. Policies reducing consumption of tobacco products

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>24.1</td>
<td>35</td>
<td>22.7</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>33.1</td>
<td>48</td>
<td>33.3</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>23.4</td>
<td>34</td>
<td>18.9</td>
</tr>
<tr>
<td>D - Under development</td>
<td>12.4</td>
<td>18</td>
<td>12.9</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>2.8</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>4.1</td>
<td>6</td>
<td>7.6</td>
</tr>
<tr>
<td>Total (without don't know)</td>
<td>100</td>
<td>145</td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>13.2</td>
<td>22</td>
<td>19</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.49, SD = 1.29, \(^b\) Mean: 2.65, SD = 1.48, \(^c\) Mean: 2.75, SD = 1.52

At each of the national, governorate and provincial levels, the largest group of participants (33.1%, 33.3%, 30.2%, respectively) answered ‘partially implemented’, while the smallest group (2.8%, 4.5%, 5.4%) answered ‘being considered’. The percentages of participants reporting that interventions were at the fully or partially implemented stage of development were national (57.2%), regional (56.0%) and provincial (52.7%). The percentages of participants reporting that at least some action was being implemented were national (95.9%), regional (92.4%) and provincial (92.2%). The means of the Health Promotion policy development scales with respect to tobacco for the three geographical levels ranged from 2.49 (national) to 2.75 (provincial), with reported development decreasing from the national to the provincial level. These means were equivalent to stage B development at the national level, and stage C at the regional and provincial levels.

Policies reducing consumption of fatty, sugary and salty food

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels that promote healthy lifestyles in relation to reducing consumption of fatty, sugary and salty food (see Table 23).
Table 23. Policies reducing consumption of fatty, sugary and salty food

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National\textsuperscript{a}</th>
<th>Regional\textsuperscript{b}</th>
<th>Provincial\textsuperscript{c}</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>8.1</td>
<td>11</td>
<td>7.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>24.3</td>
<td>33</td>
<td>25.4</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>21.3</td>
<td>29</td>
<td>19.0</td>
</tr>
<tr>
<td>D - Under development</td>
<td>20.6</td>
<td>28</td>
<td>20.6</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>7.4</td>
<td>10</td>
<td>6.3</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>18.4</td>
<td>25</td>
<td>20.6</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>136</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>21.3</td>
<td>29</td>
<td>31</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Mean: 3.50, SD = 1.58, \textsuperscript{b} Mean: 3.54, SD = 1.62, \textsuperscript{c} Mean: 3.66, SD = 1.61

At each of the national, governorate and provincial levels, the largest group of participants (24.3%, 25.4%, and 23.3%, respectively) answered ‘partially implemented’, while the smallest group (7.4%, 6.3% and 6.0%, respectively) answered ‘being considered’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 32.4% at the national level, 33.3% at the regional level and 30.2% at the provincial level. The percentage of participants reporting at least some action was as follows: 81.6% (national), 79.4% (regional) and 77.6% (provincial). The means of the Health Promotion policy development scales in respect to fatty, sugary and salty food for the three country levels ranged from 3.50 (national) to 3.66 (provincial), with mean development decreasing from the national to provincial level. These means were equivalent to stage D development at all levels (national, regional and provincial).

Policies to increase physical activity

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels that promote healthy lifestyles in relation to increasing physical activities (see Table 24).
Table 24. Policies to increase physical activity

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationalb</th>
<th>Regionalb</th>
<th>Provincialc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>8.9</td>
<td>13</td>
<td>8.3</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>30.1</td>
<td>44</td>
<td>28.6</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>25.3</td>
<td>37</td>
<td>24.1</td>
</tr>
<tr>
<td>D - Under development</td>
<td>19.9</td>
<td>29</td>
<td>19.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>4.1</td>
<td>6</td>
<td>4.5</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>11.6</td>
<td>17</td>
<td>15.0</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>146</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>13.1</td>
<td>19</td>
<td>23.3</td>
</tr>
</tbody>
</table>

a Mean: 3.15, SD = 1.44, b Mean: 3.29, SD = 1.51, c Mean: 3.39, SD = 1.51

At each of the national, governorate and provincial levels, the largest group of participants (30.1%, 28.6% and 28.3%, respectively) answered ‘partially implemented’, while the smallest group (4.1%, 4.5% 4.7%, respectively) answered ‘being considered’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 39% (national), 36.9% (regional) and 35.4% (provincial). The percentage of participants reporting that at least some action was being taken was 88.4% (national), 85.0% (regional) and 84.3% (provincial). The means of the Health Promotion policy development scales with respect to physical activity for the three country levels ranged from 3.15 (national) to 3.39 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development at all levels (national, regional and provincial).

Policies controlling and preventing consumption of illicit drugs and alcohol

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels that promote healthy lifestyles in relation to controlling and preventing consumption of illicit drugs and alcohol (see Table 25).
Table 25. Policies preventing consumption of illicit drugs and alcohol

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>27.4</td>
<td>40</td>
<td>23.7</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>30.1</td>
<td>44</td>
<td>29.5</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>24.0</td>
<td>35</td>
<td>23.0</td>
</tr>
<tr>
<td>D - Under development</td>
<td>12.3</td>
<td>18</td>
<td>13.7</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.4</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>4.8</td>
<td>7</td>
<td>7.9</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>146</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>13.7</td>
<td>20</td>
<td>18.7</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.45, SD = 1.31, \(^b\) Mean: 2.65, SD = 1.44, \(^c\) Mean: 2.74, SD = 1.53

At each of the national, governorate and provincial levels, the largest group of participants (30.1%, 29.5% and 26.5%, respectively) answered ‘partially implemented’, while the smallest group (1.4%, 2.2% and 2.9%, respectively) answered ‘being considered’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 57.5% (national), 53.2% (regional) and 51.5% (regional). The percentage of participants reporting at least some action was 95.2% (national), 92.1% (regional) and 90.4% (provincial). The means of the Health Promotion policy development scales with respect to the consumption of illicit drugs and alcohol for the three country levels ranged from 2.45 (national) to 2.74 (provincial), with mean development decreasing from the national to the provincial levels. These means were equivalent to stage B development at the national level and stage C at the regional and provincial levels. Figure 5 below shows the stage of development of policies for risk factors for NCDs, by risk factor and geographical area.
Figure 5 shows that the stage of development of policies for risk factors for NCDs was higher for illicit drugs, alcohol and tobacco (Score 4.3-4.6; Grade B-C) and lower for fatty foods and physical activity (Score: 3.3-3.9; Grade C-D). The stage of development of policies for risk factors for NCDs was the highest at the national level, lower at the regional level and lowest at the provincial level for all four risk factors.

4.1.5.1.2 Awareness of policies/ legislation/ regulations in Oman addressing NCDs

The subsections below present participants responses in relation to policies addressing the four main NCDs.

Policies addressing CVDs

Participants were asked to identify the stage of development of Omani policies/legislation/ regulations addressing the prevention of CVDs at the national, regional (governorate) and provincial (wilayat) levels (see Table 26).
Table 26. Policies addressing CVDs

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Regional&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Provincial&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>21.9</td>
<td>28</td>
<td>17.4</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>28.9</td>
<td>37</td>
<td>28.7</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>20.3</td>
<td>26</td>
<td>17.4</td>
</tr>
<tr>
<td>D - Under development</td>
<td>14.8</td>
<td>19</td>
<td>16.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>7.0</td>
<td>9</td>
<td>10.4</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>7.0</td>
<td>9</td>
<td>9.6</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>128</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>28.1</td>
<td>36</td>
<td>42.6</td>
</tr>
</tbody>
</table>

<sup>a</sup> Mean: 2.77, SD = 1.48, <sup>b</sup> Mean: 3.03, SD = 1.56, <sup>c</sup> Mean: 3.04, SD = 1.54

At the national, regional and provincial levels, the largest group of participants (28.9%, 28.7% and 28.6%, respectively) answered ‘partially implemented’. At the national and provincial levels, the smallest group (7.4% and 8.9%, respectively) answered ‘being considered’, while at the regional level, the smallest group (9.6%) answered ‘not currently actioned’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 50.8% (national), 46.1% (regional) and 44.7% (provincial). The percentage of participants reporting that at least some action was being taken was 93.0% (national), 90.4% (regional) and 90.2% (provincial). The means of the Health Promotion policy development scales with respect to CVDs for the three country levels ranged from 2.77 (national) to 3.04 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development at all levels (national, regional and provincial).

Policies addressing prevention of diabetes

Participants were asked to identify the stage of development of Omani policies/legislation/regulations addressing the prevention of diabetes at the national, regional (governorate) and provincial (wilayat) levels (see Table 27).
Table 27. Policies addressing prevention of diabetes

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>28.9</td>
<td>43</td>
<td>27.8</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>31.5</td>
<td>47</td>
<td>27.1</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>25.5</td>
<td>38</td>
<td>29.2</td>
</tr>
<tr>
<td>D - Under development</td>
<td>6.7</td>
<td>10</td>
<td>6.9</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.4</td>
<td>5</td>
<td>4.9</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>4.0</td>
<td>6</td>
<td>4.2</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>149</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>20.8</td>
<td>14</td>
<td>30.4</td>
</tr>
</tbody>
</table>

\(^a\)Mean: 2.36, SD = 1.28, \(^b\)Mean: 2.47, SD = 1.32, \(^c\)Mean: 2.49, SD = 1.32

At the national level, the largest group of participants (31.5%) answered ‘partially implemented’, at the regional level, it was ‘fully implemented’ (27.8%) and at the provincial level, it was ‘actioned’ (29.2%). The smallest group at the national level cited ‘being considered’ (3.4%), while at the regional level and provincial levels, it was ‘not currently actioned’ (4.2% in each case). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 60.4% (national), 54.8% (regional) and 54.2% (provincial). The percentage of participants reporting that at least some action was being taken was 96.0% (national), 95.8% (regional) and 95.8% (provincial).

The means of the Health Promotion policy development scales with respect to diabetes for the three country levels ranged from 2.36 (national) to 2.49 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development at all levels (national, regional and provincial).

Policies addressing prevention of cancer

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels focusing on the prevention of cancer (see Table 28).
### Table 28. Policies addressing prevention of cancer

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>19.1</td>
<td>26</td>
<td>17.6</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>30.1</td>
<td>41</td>
<td>25.6</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>23.5</td>
<td>32</td>
<td>22.4</td>
</tr>
<tr>
<td>D - Under development</td>
<td>14.0</td>
<td>19</td>
<td>18.4</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>7.4</td>
<td>10</td>
<td>6.4</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>5.9</td>
<td>8</td>
<td>9.6</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>136</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>22.1</td>
<td>30</td>
<td>23.3</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.78, SD = 1.41, \(^b\) Mean: 2.99, SD = 1.51, \(^c\) Mean: 3.20, SD = 1.62

At the national, regional and provincial levels, the largest group of participants (30.1%, 25.6% and 25.4%, respectively) answered ‘partially implemented’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 49.2% (national), 43.2% (regional) and 41.0% (provincial). The percentage of participants reporting at least some action was 94.1% (national), 90.4% (regional) and 86.9% (provincial). The means of the Health Promotion policy development scales with respect to cancer for the three country levels ranged from 2.78 (national) to 3.20 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development at all levels (for national, regional and provincial).

**Policies addressing prevention of chronic respiratory diseases**

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels addressing the prevention of chronic respiratory diseases (see Table 29).
Table 29. Policies addressing prevention of chronic respiratory diseases

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>21.1</td>
<td>26</td>
<td>18.0</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>26.0</td>
<td>32</td>
<td>27.9</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>23.6</td>
<td>29</td>
<td>19.8</td>
</tr>
<tr>
<td>D - Under development</td>
<td>9.8</td>
<td>12</td>
<td>11.7</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>7.3</td>
<td>9</td>
<td>5.4</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>12.2</td>
<td>15</td>
<td>17.1</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>123</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>32.5</td>
<td>40</td>
<td>42.3</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.93, SD = 1.62, \(^b\) Mean: 3.09, SD = 1.70, \(^c\) Mean: 3.23, SD = 1.68

At the national, regional and provincial levels, the largest group of participants (26.0%, 27.9% and 24.5%, respectively) answered ‘partially implemented’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 47.1% (national), 45.9% (regional) and 30.9% (provincial). The percentage of participants reporting at least some action was 87.8% (national), 82.9% (regional) and 82.7% (provincial). The means of the Health Promotion policy development scales with respect to chronic respiratory diseases for the three country levels ranged from 2.93 (national) to 3.23 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development at all levels (national, regional and provincial).

Overall, the stage of development of policies for NCDs was higher at the national level than at the regional and provincial levels for all four NCDs. Figure 6 below shows the stages of development of policies for NCDs, by major NCDs and geographical region.
Figure 6. Development stage of policies for NCDs, by region

Figure 6 shows that the stage of development of policies for non-communicable diseases was higher for diabetes (Score 4.5-4.6; Grade B) than that for other non-communicable diseases. The stage of development of policies for NCDs was higher at the national and lower at the regional and provincial levels for all four NCDs.

4.1.5.1.3 Awareness of policies/legislation/regulations in Oman addressing the socioeconomic determinants of health

The subsections below present the participants’ responses in relation to policies addressing the socioeconomic determinants of health relevant to NCDs and their key risk factors.

Policies in Oman addressing increased access to a clean and safe environment

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels addressing increased access to a clean and safe environment (see Table 30).
Table 30. Policies in Oman for access to clean and safe environment

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>11.7</td>
<td>11</td>
<td>10.2</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>38.3</td>
<td>36</td>
<td>40.9</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>20.2</td>
<td>19</td>
<td>18.2</td>
</tr>
<tr>
<td>D - Under development</td>
<td>8.5</td>
<td>8</td>
<td>10.2</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>10.6</td>
<td>10</td>
<td>9.1</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>10.6</td>
<td>10</td>
<td>11.4</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>94</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>70.2</td>
<td>66</td>
<td>79.5</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 3.00, SD= 1.53, \(^b\) Mean: 3.01, SD= 1.53, \(^c\) Mean: 3.06, SD= 1.59

At the national, regional and provincial levels, the largest group of participants (38.3%, 40.9% and 39.1%, respectively) answered ‘partially implemented’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 50.0% (national), 51.1% (regional) and 49.4% (provincial). The percentage of participants reporting at least some action was 89.4% (national), 88.6% (regional) and 85.1% (provincial). The means of the policy development scales with respect to increased access to a clean and safe environment for the three country levels ranged from 3.00 (national) to 3.06 (provincial), with mean development slightly decreasing from the national to the provincial. These means were equivalent to stage C development at all levels (national, regional and provincial).

Policies addressing increased access to universal health services

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels addressing increased access to universal health services (see Table 31).
Table 31. Policies addressing increased access to universal health services

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>31.1</td>
<td>37</td>
<td>28.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>33.6</td>
<td>40</td>
<td>34.2</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>18.5</td>
<td>22</td>
<td>20.2</td>
</tr>
<tr>
<td>D - Under development</td>
<td>7.6</td>
<td>9</td>
<td>10.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>4.2</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>5.0</td>
<td>6</td>
<td>3.5</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>119</td>
<td>100</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.35, SD = 1.37, \(^b\) Mean: 2.34, SD = 1.27, \(^c\) Mean: 2.37, SD = 1.31

At the national, regional and provincial levels, the largest group of participants (33.6%, 34.2% and 33.9%, respectively) answered ‘partially implemented’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 64.7% (national), 63.1% (regional) and 62.6% (provincial). The percentage of participants reporting at least some action was 95.0% (national), 96.5% (regional) and 95.7% (provincial). The means of the policy development scales in respect to increased access to universal health services for the three country levels ranged from 2.35 (national) to 2.37 (provincial), with mean development slightly decreasing from the national to the provincial level. These means were equivalent to stage B development at all levels (national, regional and provincial).

Policies addressing increased access to universal education

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels addressing increased access to universal education (see Table 32).
**Table 32. Policies addressing increased access to universal education**

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>44.3</td>
<td>58</td>
<td>41.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>23.7</td>
<td>31</td>
<td>25.6</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>24.4</td>
<td>32</td>
<td>25.6</td>
</tr>
<tr>
<td>D - Under development</td>
<td>3.1</td>
<td>4</td>
<td>3.9</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>2.3</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>2.3</td>
<td>3</td>
<td>1.6</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>131</td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>19.1</td>
<td>25</td>
<td>21.7</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.02, SD = 1.18, \(^b\) Mean: 2.02, SD = 1.11, \(^c\) Mean: 2.13, SD = 1.27

At the national, regional and provincial levels, the largest group of participants (44.3%, 41.9% and 39.7%, respectively) answered ‘fully implemented’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 68.0% (national), 67.5% (regional) and 67.5% (provincial). The percentage of participants reporting at least some action was 97.7% (national), 98.4% (regional) and 95.2% (provincial). The means of the policy development scales with respect to increased access to universal education for the three country levels ranged from 2.02 (National) to 2.13 (Provincial), with mean development slightly decreasing from the national to the provincial level. These means were equivalent to stage B development for all levels (national, regional and provincial).

**Policies addressing increased access to employment opportunities**

Participants were asked to identify the stage of development of Omani policies/legislation/regulations at the national, regional (governorate) and provincial (wilayat) levels addressing increased access to employment opportunities (see Table 33).
Table 33. Policies addressing increased access to employment opportunities

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Regional&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Provincial&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>22.0</td>
<td>26</td>
<td>17.0</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>26.3</td>
<td>31</td>
<td>28.6</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>23.7</td>
<td>28</td>
<td>21.4</td>
</tr>
<tr>
<td>D - Under development</td>
<td>15.3</td>
<td>18</td>
<td>17.0</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>7.6</td>
<td>9</td>
<td>8.0</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>5.1</td>
<td>6</td>
<td>8.0</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>118</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>33.9</td>
<td>40</td>
<td>40.2</td>
</tr>
</tbody>
</table>

<sup>a</sup> Mean: 2.75, SD = 1.42, <sup>b</sup> Mean: 2.95, SD = 1.48, <sup>c</sup> Mean: 3.00, SD = 1.53

At the national, regional and provincial levels, the largest group of participants (26.3%, 28.6% and 28.4%, respectively) answered ‘partially implemented’. The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 48.3% (national), 45.6% (regional) and 44.9% (provincial). The percentage of participants reporting that at least some action was being taken was 94.9% (national), 92.0% (regional) and 89.9% (provincial). The means of the policy development scales with respect to increased access to employment opportunities for the three country levels ranged from 2.75 (national) to 3.00 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development for all levels (national, regional and provincial). Figure 7 shows the stages of development of policies addressing socioeconomic determinants of health, by determinant and geographical region.
Figure 7. Development stages of policies on the socioeconomic determinants of health, by region

Figure 7 shows that the stage of development of policies for socioeconomic determinants of health was the highest for access to universal education and access to universal health services (Score 4.6-5.0; Grade B) and the lowest for access to clean and safe environment (Score 3.9-4.0; Grade C). There were no consistent trends in the stages of development of policies for socioeconomic determinants from national to regional levels.

4.1.5.1.4 Available national plans of action, strategies, guidelines or programmes in Oman

The subsections below present participants’ responses in relation to national plans of actions in a range of areas relevant to NCDs and their key risk factors.

National plans of action for tobacco control

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in relation to tobacco control in Oman (see Table 34).
**Table 34. National plans of action for tobacco control**

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>24.2</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>33.1</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>25.0</td>
</tr>
<tr>
<td>D - Under development</td>
<td>9.7</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>4.0</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>4.0</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>26.6</td>
</tr>
</tbody>
</table>

*Mean: 2.48, SD = 1.29

The largest group of participants answered, ‘partially implemented’ (24.2%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 57.3%. The percentage of participants reporting that at least some action at the national level was 96.0%. The mean of the policy development scale for national plans of action, strategies, guidelines or programmes in Oman in relation to tobacco control was 2.48. This mean was equivalent to stage B development.

**National plans of action for healthy diet**

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in relation to healthy diet in Oman (see Table 35).

**Table 35. National plans of action for healthy diet**

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>16.7</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>30.0</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>22.5</td>
</tr>
<tr>
<td>D - Under development</td>
<td>15.8</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>9.2</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>5.8</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>30</td>
</tr>
</tbody>
</table>

*a Mean: 2.88, SD = 1.42
The largest group of participants answered, ‘partially implemented’ (16.7%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 46.7%. The percentage of participants reporting that at least some action was being taken was 94.2%. The mean of the policy development scale for national plans of action, strategies, guidelines or programmes in Oman in relation to healthy diet was 2.88. This mean was equivalent to stage C development.

National plans of action for physical activity

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to physical activity (see Table 36).

Table 36. National plans of action for relation to physical activity

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>11.2</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>26.4</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>18.4</td>
</tr>
<tr>
<td>D - Under development</td>
<td>22.4</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>9.6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>12.0</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>25.6</td>
</tr>
</tbody>
</table>

* Mean: 3.29, SD = 1.53

The largest group of participants answered, ‘partially implemented’ (26.4%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially’ implemented stage of development was 37.6%. The percentage of participants reporting that at least some action was being taken was 88.0%. The mean of the policy development scale for national plans of action, strategies, guidelines or programmes in Oman in relation to physical activity was 3.29. This mean was equivalent to stage C development.
National plans of action for prevention and control consumption of illicit drugs and alcohol

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of the consumption of illicit drugs and alcohol (see Table 37).

Table 37. National plans of action consumption of illicit drugs and alcohol

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Fully implemented</td>
<td>21.7</td>
<td>26</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>28.3</td>
<td>34</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>26.7</td>
<td>32</td>
</tr>
<tr>
<td>D - Under development</td>
<td>6.2</td>
<td>11</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>5.0</td>
<td>6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>9.2</td>
<td>11</td>
</tr>
<tr>
<td>Total (without don't know)</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>30</td>
<td>36</td>
</tr>
</tbody>
</table>

*a Mean: 2.75, SD = 1.49

The largest group of participants answered, ‘partially implemented’ (28.3%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 50.0%. The percentage of participants reporting that at least some action was being taken was 90.8%. The mean of the policy development scale for national level plans of action, strategies, guidelines or programmes in Oman related to prevention and control consumption of illicit drugs was 2.75. This mean was equivalent to stage C development.

National plans of action for prevention and control of cardiovascular disease

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of cardiovascular disease (see Table 38).
### Table 38. National plans of action for cardiovascular disease

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>15.7</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>32.4</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>23.1</td>
</tr>
<tr>
<td>D - Under development</td>
<td>14.8</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>4.6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>9.3</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>46.3</td>
</tr>
</tbody>
</table>

<sup>a</sup> Mean: 2.88, SD = 1.46

The largest group of participants answered, ‘partially implemented’ (32.4%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 48.1%. The percentage of participants reporting that at least some action was being taken was 90.7%. The mean of the policy development scale for national plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of cardiovascular disease at the national level was 2.88. This mean was equivalent to stage C development.

### National plans of action for prevention and control of diabetes

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of diabetes (see Table 39).
Table 39. National plans of action for diabetes

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>25.4</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>29.4</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>25.4</td>
</tr>
<tr>
<td>D - Under development</td>
<td>8.7</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.2</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>7.9</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>25.4</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.59, SD = 1.44

The largest group of participants answered partially implemented (29.4%). The percentage of participants reporting that interventions were at the fully or partially implemented stage of development was 54.8%. The percentage of participants reporting that at least some action was being taken was 92.1%. The mean of the policy development scale for national plans of action, strategies, guidelines or programmes in Oman in relation of the prevention and control of diabetes was 2.59. This mean was equivalent to stage C development.

National plans of action for the prevention and control of cancer

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of cancer (see Table 40).
Table 40. National plans of action for cancer

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>15.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>31.9</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>21.2</td>
</tr>
<tr>
<td>D - Under development</td>
<td>13.3</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>5.3</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>12.4</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>39.8</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 2.97, SD = 1.56

The largest group of participants answered, ‘partially implemented’ (31.9%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 47.8%. The percentage of participants reporting that at least some action was being taken was 87.6%. The mean of the policy development scale for national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of cancer was 2.97. This mean was equivalent to stage C development.

**National plans of action for the prevention and control of chronic respiratory diseases**

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of chronic respiratory diseases (see Table 41).
Table 41. National plans for chronic respiratory diseases

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Fully implemented</td>
<td>14.3</td>
<td>14</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>26.5</td>
<td>26</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>22.4</td>
<td>22</td>
</tr>
<tr>
<td>D - Under development</td>
<td>19.4</td>
<td>19</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>5.1</td>
<td>5</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>12.2</td>
<td>12</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>98</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>59.2</td>
<td>58</td>
</tr>
</tbody>
</table>

*a Mean: 3.11, SD = 1.53

The largest group of participants answered, ‘partially implemented’ (26.5%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 40.8%. The percentage of participants reporting that at least some action was being taken was 87.8%. The mean of the policy development scale for national level plans of action, strategies, guidelines or programmes in Oman in relation to the prevention and control of chronic respiratory diseases was 3.11. This mean was equivalent to stage C development.

Figure 8 below shows the stages of development of national plans for across NCDs and their risk factors.
Figure 8 shows that the stage of development of the national plan of action for NCDs was higher for diabetes (Score 4.4; Grade C) than for the other NCDs.

The stage of development of the national plan of action for risk factors for NCDs was highest for tobacco (Score 4.5; Grade B) and lowest for physical activity (Score 3.7; Grade C).

**National plans of action for settings-based Health Promotion, such as schools, workplaces and communities**

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to settings-based Health Promotion, such as schools, workplaces and communities (see Table 42).

**Table 42. National plans of action for settings-based Health Promotion**

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Fully implemented</td>
<td>23.8</td>
<td>30</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>32.5</td>
<td>41</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>28.6</td>
<td>36</td>
</tr>
<tr>
<td>D - Under development</td>
<td>7.1</td>
<td>9</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.2</td>
<td>4</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>4.8</td>
<td>6</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>126</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>24.6</td>
<td>31</td>
</tr>
</tbody>
</table>

a Mean: 2.27, SD= 1.12

The largest group of participants answered, ‘partially implemented’ (32.5%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 56.3%. The percentage of participants reporting that at least some action was being taken was 95.2%. The mean of the policy development scale for national level plans of action, strategies, guidelines or programmes in Oman in relation to settings-based Health Promotion was 2.27. This mean was equivalent to stage B development.
National plans of action for information, education and communication/health education/social mobilisation or related plans

Participants were asked to identify the stage of development of national level plans of action, strategies, guidelines or programmes in Oman in relation to information, education and communication/health education/social mobilisation or related plans (see Table 43).

Table 43. National plans of action for information, education and social mobilisation

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>24.8</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>30.2</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>32.6</td>
</tr>
<tr>
<td>D - Under development</td>
<td>4.7</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.9</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>3.9</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>22.5</td>
</tr>
</tbody>
</table>

a Mean: 2.44, SD = 1.24

The largest group of participants answered ‘actioned’ (32.6%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 55.0%. The percentage of participants reporting that at least some action was being taken 96.1%. The mean of the policy development scale for national level plans of action, strategies, guidelines or programmes in Oman, in relation to information, education and communication/health education/social mobilisation or related plans, was 2.44. This mean was equivalent to stage B development.

Guidelines for staff members to plan, implement and evaluate activities that improve health

Participants were asked to identify the stage of development in Oman of recent national level guidelines (i.e., within the last five years) for staff members to plan, implement and evaluate activities that improve health (see Table 44).
Table 44. Guidelines to plan, implement and evaluate Health Promotion activities

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Fully implemented</td>
<td>17.5</td>
<td>18</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>33.0</td>
<td>34</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>22.3</td>
<td>23</td>
</tr>
<tr>
<td>D - Under development</td>
<td>8.7</td>
<td>9</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>4.9</td>
<td>5</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>13.6</td>
<td>14</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>103</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>53.4</td>
<td>55</td>
</tr>
</tbody>
</table>

* Mean: 2.9, SD = 1.60

The largest group of participants answered, ‘partially implemented’ (33%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 50.5%. The percentage of participants reporting that at least some action was being taken was 86.4%. The mean stage of development of recent guidelines in Oman for staff members to plan, implement and evaluate activities that improve health was 2.44. This mean was equivalent to stage B development.

4.1.5.2. Domain 2: Core of expertise in Health Promotion

The subsections below present participants’ responses in relation to the existence of Health Promotion department for NCDs and the prevention of their key risk factors.

4.1.5.2.1 Health Promotion unit/section/centre/department

Participants were asked to choose (Yes/No/Don’t know) with respect to whether Oman has an identifiable/designated ‘Health Promotion for NCDs prevention’ unit/section/centre/department within the national MOH or a group described differently but with similar explicitly stated functions (see Table 45).
Most participants answered ‘yes’, that Oman does have an identifiable/designated ‘Health Promotion’ unit/section/centre/department within the national MOH (77.1%), while the smallest group (5.0%) answered ‘no’.

### 4.1.5.2.2 Other existing units that perform functions related to Health Promotion for NCDs

Table 46 shows participants’ assessments of Health Promotion development in existing units that perform functions related to health promotion for NCDs prevention, even when not explicitly described in this way.

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>26.4</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>28.3</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>34.0</td>
</tr>
<tr>
<td>D - Under development</td>
<td>3.8</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.9</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>5.7</td>
</tr>
<tr>
<td>Total (without don't know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>24.5</td>
</tr>
</tbody>
</table>

*Mean: 2.43, SD = 1.29

If their answer to question 2.1a was ‘no’, participants were asked to identify the stage of development of the department that performs functions related to Health Promotion for prevention of NCDs (see Table 46).

The largest group of participants answered actioned (34.0%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 54.7%. The percentage of participants reporting that at least some action
was being taken was 94.3%. The mean stage of development was 2.43, which was equivalent to stage B development.

4.1.5.2.3 Health Promotion is appropriate as best practice to prevent and control NCDs in Oman
Participants were asked to choose (Yes/No/Don’t know) to answer if the main focus of Health Promotion activity is appropriate as a best practice to prevent and control NCDs in Oman (see Table 47).

**Table 47. Best practice to prevent and control NCDs**

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>83.1</td>
<td>113</td>
</tr>
<tr>
<td>No</td>
<td>1.47</td>
<td>2</td>
</tr>
<tr>
<td>Don't know</td>
<td>15.4</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>136</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ to the question about whether Health Promotion is appropriate best practice to prevent and control NCDs in Oman was 83.1%. The percentage who answered ‘no’ was extremely low at 1.47%.

4.1.5.3. Domain 3: collaborative Health Promotion mechanisms within the government for the prevention and control of NCDs
The subsections below present participants’ responses in relation to collaborative Health Promotion mechanisms within governmental sectors for the prevention and control of NCDs.

4.1.5.3.1 Systematic coordination of activities promoting health for the prevention and control of NCDs
Participants were asked to identify the stage of development of systematic coordination of activities that promote health for NCD prevention and control within national/state or lower-level public health programmes in the MOH (see Table 48).
Table 48. Systematic coordination of activities that promote health

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>18.4</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>34.2</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>21.1</td>
</tr>
<tr>
<td>D - Under development</td>
<td>5.3</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>7.9</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>13.2</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>26.3</td>
</tr>
</tbody>
</table>

National Mean: 2.85, SD = 1.64

The largest group of participants answered, ‘partially implemented’ (34.2%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 52.6%. The percentage of participants reporting that at least some action was being taken was 86.8%. The mean stage of development of available systematic coordination of activities that promote health for the prevention and control of NCDs within the national/state or lower level public health programmes in the MOH was 2.85. This mean was equivalent to stage C development.

4.1.5.3.2 Joint activities that promote health for the prevention and control of NCDs

Participants were asked to identify the stage of development with respect to collaboration at the national and provincial level in Oman between the public health sector and the curative services sector within the MOH to deliver jointly activities that promote health for the prevention and control of NCDs (see Table 49).
Table 49. Joint activities between public and curative sectors that promote health

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National and Regional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>13.6</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>30.7</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>31.8</td>
</tr>
<tr>
<td>D - Under development</td>
<td>12.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.4</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>8.0</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>45.5</td>
</tr>
</tbody>
</table>

National, Regional Mean: 2.89, SD = 1.64

The largest group of participants answered ‘actioned’ (31.8%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 44.3%. The percentage of participants reporting that at least some action was being taken was 92.0%. The mean stage of development at the national and regional level in Oman in relation to collaboration between the public health sector and the curative services sector within the MOH for joint activities that promote health in the context of the prevention and control of NCDs was 2.89, which was equivalent to stage C development.

4.1.5.3.3 Collaboration for joint activities that promote health

Participants were asked to identify the stage of development of collaboration between ministries within the national government with respect to delivering joint activities that promote health at the national, provincial and local levels (see Table 50).
The largest group of participants answered ‘actioned’ (31.8%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 44.3% at the national, regional and provincial level. The percentage of participants reporting that at least some action was being taken at the national, regional and provincial levels was 94.5%. The mean stage of development for collaboration between ministries within the national government for coordination of joint activities that promote health at the national, provincial and local levels was 2.94. This mean was equivalent to stage C development.

4.1.5.4. Domain 4: Health Promotion programme delivery

The subsections below present the participants’ responses in relation to activities that promote Health Promotion programme delivery for the prevention and control of NCDs.

4.1.5.4.1 Activities that promote health for the prevention and control of NCDs

Participants were asked to identify the stage of development in Oman of recent national level activities that promote health (i.e., within the last five years) (see Table 51).
Table 51. Activities that promote health

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>13.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>33.3</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>22.2</td>
</tr>
<tr>
<td>D - Under development</td>
<td>16.7</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>2.8</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>11.1</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>33.3</td>
</tr>
</tbody>
</table>

<sup>a</sup> Mean: 2.94, SD = 1.49

The largest group of participants answered, ‘partially implemented’ (33.3%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 47.2%. The percentage of participants reporting that at least some action was being taken was 88.9%. The mean stage of development with respect to nationwide structure/mechanisms for the delivery of activities that promote health in the context of preventing and controlling NCDs was 2.94. This mean was equivalent to stage C development.

4.1.5.4.2. Evidence-based Health Promotion planning, implementation and evaluation for prevention and control of NCDs

Participants were asked to identify the stage of development of the use of evidence-based Health Promotion planning, implementation and evaluation for the prevention and control of NCDs (see Table 52).
Table 52. Evidence-based Health Promotion planning, implementation and evaluation

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>17.5</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>27.5</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>37.5</td>
</tr>
<tr>
<td>D - Under development</td>
<td>7.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>13.75</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>6.25</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>60</td>
</tr>
</tbody>
</table>

* Mean: 4.32, SD = 2.32

The largest group of participants answered ‘actioned’ (23.4%). The percentage of participants reporting that interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 28.0%. The percentage of participants reporting that at least some action was being taken was 96.1%. The mean stage of development with respect to the use of evidence-based Health Promotion planning, implementation and evaluation for the prevention and control of NCDs was 4.32. This mean was equivalent to stage D development.

4.1.5.4.3. Use of combinations of intervention strategies in Health Promotion activities

Participants were asked to identify the stage of development of the use of combinations of intervention strategies for the prevention and control of NCDs. Intervention strategies include empowerment through health communication; development of environments that are supportive to health e.g., policies and laws on food or tobacco; reorientation of services and advocacy for health (see Table 53).
The largest group of participants answered, ‘partially implemented’ (30.1%). The percentage of participants reporting that this intervention was at the ‘fully’ or ‘partially implemented’ stage of development was 47%. The percentage of participants reporting that at least some action was being taken 90.3%. The mean the stage of development with respect to the use of combinations of intervention strategies for the prevention and control of NCDs was 4.32. This mean was equivalent to stage D development.

4.1.5.5. Domain 5: Health Promotion partnerships among non-government organisations, the private sector and government.

The subsections below present the participants’ responses in relation to activities that promote Health Promotion partnerships among non-government organisations, the private sector and government.

4.1.5.5.1 Collaboration between non-governmental organisations/civil society and national government with respect to joint Health Promotion activities for the prevention and control of NCDs

Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether there was collaboration between non-governmental organisations/civil society and national government in delivering joint Health Promotion activities for the prevention and control of NCDs in Oman (see Table 54).
Table 54. NGO and national government collaboration in activities for the prevention and control of NCDs

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>47.1</td>
<td>49</td>
</tr>
<tr>
<td>No</td>
<td>12.5</td>
<td>13</td>
</tr>
<tr>
<td>Don’t know</td>
<td>40.4</td>
<td>42</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ to the question was 47.1%. The percentage who answered ‘no’ was 12.5%.

4.1.5.5.2 Collaboration between the private sector and national government with respect to joint Health Promotion activities for the prevention and control of NCDs

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether there is collaboration between private sector establishments and national government in delivering joint Health Promotion activities for the prevention and control of NCDs (see Table 55).

Table 55. Private sector and national government collaboration with respect to joint Health Promotion activities for the prevention and control of NCDs

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>44</td>
<td>48</td>
</tr>
<tr>
<td>No</td>
<td>15.6</td>
<td>17</td>
</tr>
<tr>
<td>Don’t know</td>
<td>40.4</td>
<td>44</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 44%; 15.6% answered ‘no’.

4.1.5.5.3 Collaboration between the private sector and NGOs with respect to joint Health Promotion activities for the prevention and control of NCDs

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether there is collaboration between the private sector and non-governmental organisations/civil societies in delivering joint Health Promotion activities for the prevention and control of NCDs in Oman (see Table 56).
Table 56. Collaboration between the private sector and NGOs with respect to joint Health Promotion activities for the prevention and control of NCDs

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td>No</td>
<td>15.5</td>
<td>18</td>
</tr>
<tr>
<td>Don't know</td>
<td>40.5</td>
<td>47</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 44%; 15.5% answered ‘no’.

4.1.5.5.4 Partnerships covering prevention and control of tobacco consumption
Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of tobacco consumption (see Table 57).

Table 57. Partnerships to prevent and control tobacco consumption

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>50.4</td>
<td>63</td>
</tr>
<tr>
<td>No</td>
<td>14.4</td>
<td>18</td>
</tr>
<tr>
<td>Don't know</td>
<td>35.2</td>
<td>44</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 50.4%; 14.4% answered ‘no’.

4.1.5.5.5 Partnerships covering prevention and control of unhealthy diets
Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of unhealthy diets (consumption of fatty, sugary and salty food) (see Table 58).
Table 58. Partnerships to prevent and control unhealthy diets

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>43.1</td>
<td>53</td>
</tr>
<tr>
<td>No</td>
<td>26.0</td>
<td>32</td>
</tr>
<tr>
<td>Don't know</td>
<td>30.9</td>
<td>38</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 43.1%; 26.0% answered ‘no’.

4.1.5.5.6 Partnerships covering the prevention and control of physical inactivity

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of physical inactivity (see Table 59).

Table 59. Partnerships to prevent and control physical inactivity

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>51.6</td>
<td>63</td>
</tr>
<tr>
<td>No</td>
<td>18.0</td>
<td>22</td>
</tr>
<tr>
<td>Don't know</td>
<td>30.3</td>
<td>37</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 74.1%; 25.9% answered ‘no’.

4.1.5.5.7 Partnerships covering the prevention and control of consumption of illicit drugs and alcohol

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of the consumption of illicit drugs and alcohol (see Table 60).
Table 60. Partnerships to prevent and control the consumption of illicit drugs and alcohol

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>51.6</td>
<td>63</td>
</tr>
<tr>
<td>No</td>
<td>15.6</td>
<td>19</td>
</tr>
<tr>
<td>Don't know</td>
<td>32.8</td>
<td>40</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 51.6%, 15.6% answered ‘no’.

4.1.5.5.8 Partnerships covering the prevention and control of cardiovascular diseases

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of cardiovascular diseases (see Table 61).

Table 61. Partnerships covering the prevention and control cardiovascular diseases

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>44.3</td>
<td>54</td>
</tr>
<tr>
<td>No</td>
<td>15.6</td>
<td>19</td>
</tr>
<tr>
<td>Don't know</td>
<td>40.2</td>
<td>49</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 44.3%; 15.6% answered ‘no’.

4.1.5.5.9 Partnerships covering the prevention and control of diabetes

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of diabetes (see Table 62).

Table 62. Partnerships covering the prevention and control of diabetes

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>55.3</td>
<td>68</td>
</tr>
<tr>
<td>No</td>
<td>15.4</td>
<td>19</td>
</tr>
<tr>
<td>Don't know</td>
<td>29.3</td>
<td>36</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 55.3%; 15.4% answered ‘no’.

185
4.1.5.5.10 **Partnerships covering the prevention and control of cancer**

Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of cancer (see Table 63).

**Table 63. Partnerships covering the prevention and control of cancer**

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>45.1</td>
<td>55</td>
</tr>
<tr>
<td>No</td>
<td>18.9</td>
<td>23</td>
</tr>
<tr>
<td>Don't know</td>
<td>36.1</td>
<td>44</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 45.1%; 18.9% answered ‘no’.

4.1.5.5.11 **Partnerships covering the prevention and control of chronic respiratory diseases**

Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between NGOs, the private sector and government cover the prevention and control of chronic respiratory diseases (see Table 64).

**Table 64. Partnerships covering the prevention and control of chronic respiratory diseases**

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33.1</td>
<td>41</td>
</tr>
<tr>
<td>No</td>
<td>21.0</td>
<td>26</td>
</tr>
<tr>
<td>Don't know</td>
<td>46.0</td>
<td>57</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 33.1%; 21.0% answered ‘no’.

4.1.5.5.12 **Partnerships covering Health Promotion settings**

Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether the partnerships between schools, workplaces, community and cities, for example, involved Health Promotion settings (see Table 65).
Table 65. Partnerships covering Health Promotion settings

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>51.2</td>
<td>63</td>
</tr>
<tr>
<td>No</td>
<td>11.4</td>
<td>14</td>
</tr>
<tr>
<td>Don’t know</td>
<td>30.9</td>
<td>38</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 51.2%; 11.4% answered ‘no’.

4.1.5.6. Domain 6: Health Promotion professional development

The subsections below present the participants’ responses in relation to interventions that promote Health Promotion professional development.

4.1.5.6.1. Health Promotion education and training at the undergraduate level

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether there is government support (in cash and/or in kind) for undergraduate level Health Promotion education and training (see Table 66).

Table 66. Health Promotion education and training at the undergraduate level

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>45.9</td>
<td>56</td>
</tr>
<tr>
<td>No</td>
<td>23.8</td>
<td>29</td>
</tr>
<tr>
<td>Don’t know</td>
<td>30.3</td>
<td>37</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 45.9%; 23.8% answered ‘no’.

4.1.5.6.2. Health Promotion education and training for prevention and control of NCDs at the undergraduate level

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ for whether there is government support (in cash and/or in kind) for undergraduate level Health Promotion education and training in the context of the prevention and control of NCDs (see Table 67).
Table 67. Health Promotion education and training for NCDs at the undergraduate level

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>48.8</td>
<td>59</td>
</tr>
<tr>
<td>No</td>
<td>20.7</td>
<td>25</td>
</tr>
<tr>
<td>Don’t know</td>
<td>30.6</td>
<td>37</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 48.8%; 20.7% answered ‘no’.

4.1.5.6.3. Health Promotion education and training at the university and postgraduate levels

Participants were asked to choose between ‘Yes’, ‘No’ and ‘Don’t know’ for whether there is government support (in cash and/or in kind) for university and postgraduate level Health Promotion education and training (see Table 68).

Table 68. Health Promotion education and training at university and postgraduate levels

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>49.6</td>
<td>60</td>
</tr>
<tr>
<td>No</td>
<td>18.2</td>
<td>22</td>
</tr>
<tr>
<td>Don’t know</td>
<td>32.2</td>
<td>39</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 49.6%; 18.2% answered no.

4.1.5.7. Domain 7: Health Promotion information systems

The subsections below present the participants’ responses in relation to mechanisms to track and report on non-communicable diseases.
4.1.5.7.1. Mechanisms to track and report on cardiovascular diseases

Participants were asked to identify the stage of development of mechanisms to track and report on cardiovascular diseases (see Table 69).

**Table 69. Mechanisms to track and report on cardiovascular diseases**

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, Regional and Provincial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>30.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>25.4</td>
</tr>
<tr>
<td>C – Actioned</td>
<td>26.8</td>
</tr>
<tr>
<td>D - Under development</td>
<td>7.0</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>2.8</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Total (without don't know)</strong></td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>62</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 4.44, SD= 2.65

The largest group of participants (45.8%) answered ‘not currently actioned’. The percentage of participants reporting that mechanisms were at the ‘fully or ’partially’ implemented stage of development was 41.7%. The percentage of participants reporting that at least some action was being taken 45.2%. The mean stage of development of mechanisms for tracking and reporting on cardiovascular diseases was 4.44. This mean was equivalent to stage D development.
4.1.5.7.2. Mechanisms to track and report on cancer

Participants were asked to identify the stage of development of mechanisms to track and report on cancer (see Table 70).

Table 70. Mechanisms to track and report on cancer

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, Regional and Provincial %</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Fully implemented</td>
<td>36.8</td>
<td>28</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>26.3</td>
<td>20</td>
</tr>
<tr>
<td>D - Under development</td>
<td>6.6</td>
<td>5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.3</td>
<td>1</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>3.9</td>
<td>3</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>76</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>50</td>
<td>38</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 3.99, SD = 2.71

The largest group of participants (36.8%) answered ‘not currently fully implemented’. The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 61.8%. The percentage of participants reporting that at least some action was being taken was 96%. The mean stage of development of mechanisms for the tracking and reporting of cancer was 3.99. This mean was equivalent to stage D development.
4.1.5.7.3. Mechanisms to track and report on diabetes

Participants were asked to identify the stage of development of mechanisms to track and report on diabetes (see Table 71).

Table 71. Mechanisms to track and report on diabetes

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, Regional and Provincial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>38.5</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>25</td>
</tr>
<tr>
<td>C – Actioned</td>
<td>26.9</td>
</tr>
<tr>
<td>D - Under development</td>
<td>3.8</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.3</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>3.8</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>43.6</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 3.77, SD = 2.72

The largest group of participants (38.5%) answered ‘fully implemented’. The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 63.5%. The percentage of participants reporting that at least some action was being taken was 95.5%. The mean stage of development for the tracking and reporting of diabetes was 3.77. This mean was equivalent to stage D development.
4.1.5.7.4. Mechanisms to track and report on chronic respiratory diseases

Participants were asked to identify the stage of development of mechanisms to track and report on chronic respiratory diseases (see Table 72).

**Table 72. Mechanisms to track and report on chronic respiratory diseases**

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, Regional and Provincial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>23.5</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>27.9</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>27.9</td>
</tr>
<tr>
<td>D - Under development</td>
<td>8.8</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.5</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>10.3</td>
</tr>
<tr>
<td>Total (without don't know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>66.2</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 4.68, SD = 2.56

The largest group of participants (27.9%) answered ‘actioned’. The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 51.4%. The percentage of participants reporting that at least some action was being taken was 89.6%. The mean stage of development for the tracking and reporting of chronic respiratory diseases was 4.68. This mean was equivalent to stage E development.
4.1.5.7.5. Mechanisms to track and report on behavioural risk factors

The subsections below present the participants’ responses in relation to mechanisms to track and report on behavioural risk factors.

Mechanisms to track and report on behavioural risk factors

Participants were asked to identify the stage of development of mechanisms to track and report on behavioural risk factors for NCDs at the national, regional (governorate) and provincial (wilayat) levels (see Table 73).

Table 73. Mechanisms to track and report on the behavioural risk factors

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National</th>
<th>Regional</th>
<th>Provincial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>15.0</td>
<td>9</td>
<td>13.0</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>25.0</td>
<td>15</td>
<td>27.8</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>33.3</td>
<td>20</td>
<td>25.9</td>
</tr>
<tr>
<td>D - Under development</td>
<td>10.0</td>
<td>6</td>
<td>11.1</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.3</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>13.3</td>
<td>8</td>
<td>20.4</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

\[a\] Mean: 3.02, SD = 1.52, \[b\] Mean: 3.22, SD = 1.68, \[c\] Mean: 3.04, SD = 1.57

The largest group of participants answered that mechanisms to track and report on behavioural risk factors had been ‘actioned’ at national and provincial levels (33.3%, 27.3%, respectively) and were ‘partially implemented’ at the regional level (27.8%). The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented stage of development was 40.0% (national), 40.3% (regional) and 41.9% (provincial). The percentage of participants reporting that at least some action was being taken was 86.7% (national), 79.6% (regional) and 85.5% (provincial). The means of the stages of development for the tracking of behavioural risk factors for NCDs at the three country levels ranged from 3.02 (national) to 3.04 (provincial), with mean development decreasing from national to provincial levels. These means were equivalent to stage C development for all three levels (national, regional and provincial levels).
Mechanisms to track and report on the use of tobacco products

Participants were asked to identify the stage of development of mechanisms to track and report on the use of tobacco products at the national, regional (governorate) and provincial (wilayat) levels (see Table 74).

Table 74. Mechanisms to track and report on the use of tobacco products

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National a</th>
<th>Regional b</th>
<th>Provincial c</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>25.0</td>
<td>17</td>
<td>18.0</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>19.1</td>
<td>13</td>
<td>23.0</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>26.5</td>
<td>18</td>
<td>23.0</td>
</tr>
<tr>
<td>D - Under development</td>
<td>11.8</td>
<td>8</td>
<td>13.1</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.5</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>16.2</td>
<td>11</td>
<td>21.3</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>68</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>67.6</td>
<td>46</td>
<td>85.2</td>
</tr>
</tbody>
</table>

a Mean: 2.94, SD = 1.69, b Mean: 3.21, SD = 1.75, c Mean: 3.19, SD = 1.69

The largest group of participants answered that mechanisms to track and report on the use of tobacco products had been ‘actioned’ at the national level (26.5%) and were ‘partially implemented’ at the provincial level (27.6%). At the regional level, 23.0% of participants said that they had been ‘partially implemented’ and a further 23.0% said they had been ‘actioned’. The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 44.1% (national), 41.0% (regional) and 43.1% (provincial). The percentage of participants reporting that at least some action was being taken was 83.8% (national), 78.7% (regional) and 81.0% (provincial). The means of the stages of development for mechanisms to track and report on the use of tobacco products for the three country levels ranged from 2.94 (national) to 3.19 (provincial), with mean development decreasing from the national to the provincial levels. These means were equivalent to stage C development for all three levels (national, regional and provincial levels).
Mechanisms to track and report on the use of alcohol and illicit drugs

Participants were asked to identify the stage of development of mechanisms to track and report on the use of alcohol and illicit drugs at the national, regional (governorate) and provincial (wilayat) levels (see Table 75).

Table 75. Mechanisms to track and report on alcohol use and use of illicit drugs

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National(^a)</th>
<th>Regional(^b)</th>
<th>Provincial(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>23.3</td>
<td>14</td>
<td>23.2</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>23.3</td>
<td>14</td>
<td>17.9</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>16.7</td>
<td>10</td>
<td>19.6</td>
</tr>
<tr>
<td>D - Under development</td>
<td>15.0</td>
<td>9</td>
<td>16.1</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.7</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>20.0</td>
<td>12</td>
<td>21.4</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>88.3</td>
<td>53</td>
<td>98.2</td>
</tr>
</tbody>
</table>

\(^a\) Mean: 3.08, SD = 1.79, \(^b\) Mean: 3.19, SD = 1.81, \(^c\) Mean: 3.15, SD = 1.77

The largest group of participants answered that mechanisms to track and report on the use of alcohol and illicit drugs had been ‘fully implemented’ at the national, regional and provincial levels (23.3%, 23.2% and 21.8%, respectively). The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 46.6% (national), 41.1% (regional) and 41.8% (provincial). The percentage of participants reporting that at least some action was being taken was 80.0% (national), 78.6% (regional) and 80.0% (provincial). The means of the stages of development for mechanisms to track and report on use of alcohol and illicit drugs for the three country levels ranged from 3.08 (national) to 3.15 (provincial), with mean development decreasing from the national to the provincial level. These means were equivalent to stage C development for all three levels (national, regional and provincial).
Mechanisms to track and report on unhealthy diet

Participants were asked to identify the stage of development of mechanisms to track and report on unhealthy diet at the national, regional (governorate) and provincial (wilayat) levels (see Table 76).

Table 76. Mechanisms to track and report on unhealthy diet

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National</th>
<th>Regional</th>
<th>Provincial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>7.8</td>
<td>5</td>
<td>6.9</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>20.3</td>
<td>13</td>
<td>20.7</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>18.8</td>
<td>12</td>
<td>19.0</td>
</tr>
<tr>
<td>D - Under development</td>
<td>15.6</td>
<td>10</td>
<td>15.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>6.3</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>31.3</td>
<td>20</td>
<td>34.5</td>
</tr>
<tr>
<td>Total (without don't know)</td>
<td>100</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>G - Don't know</td>
<td>78.1</td>
<td>50</td>
<td>96.9</td>
</tr>
</tbody>
</table>

* Mean: 3.85, SD = 1.74,  b Mean: 3.91, SD = 1.76,  c Mean: 3.88, SD = 1.75

The largest group of participants answered that mechanisms to track and report on unhealthy diet had ‘not been actioned’ at the national, regional and provincial levels (31.3%, 34.5% and 33.3%, respectively). The percentage of participants reporting that mechanisms were ‘fully’ or ‘partially implemented’ stage of development was 46.6% (national), 41.1% (regional) and 41.8% (provincial). The percentage of participants reporting that at least some action was being taken was 80.0% (national), 78.6% (regional) and 80.0% (provincial). The means of the stages of development for mechanisms to track and report on unhealthy diet for the three country levels ranged from 3.85 (national) to 3.91 (provincial), with mean development decreasing from the national to the provincial level. These means were equal to stage D development for all three levels (national, regional and provincial).
Mechanisms to track and report on physical inactivity

Participants were asked to identify the stage of development of mechanisms to track and report on physical inactivity at the national, regional (governorate) and provincial (wilayat) levels (see Table 77).

Table 77. Mechanisms to track and report on physical inactivity

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Nationala</th>
<th>Regionalb</th>
<th>Provincialc</th>
</tr>
</thead>
<tbody>
<tr>
<td>% N</td>
<td>% N</td>
<td>% N</td>
<td>% N</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>5.1 3</td>
<td>5.5 3</td>
<td>5.7 3</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>18.6 11</td>
<td>18.2 10</td>
<td>20.8 11</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>18.6 11</td>
<td>18.2 10</td>
<td>18.9 10</td>
</tr>
<tr>
<td>D - Under development</td>
<td>15.3 9</td>
<td>14.5 8</td>
<td>15.1 8</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>10.2 6</td>
<td>7.3 4</td>
<td>5.7 3</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>32.2 19</td>
<td>36.4 20</td>
<td>34.0 18</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100 59</td>
<td>100 55</td>
<td>100 53</td>
</tr>
</tbody>
</table>

G - Don’t know

| % N                           | % N       | % N       |
| 91.5 54                       | 107 107   | 113 60    |

* Mean: 4.03, SD = 1.68, b Mean: 4.09, SD = 1.72, c Mean: 3.96, SD = 1.73

The largest group of participants answered that mechanisms to track and report on physical inactivity had ‘not currently been actioned’ at the national, regional and provincial levels (32.2%, 36.4% and 34.0%, respectively). The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 46.6% (national), 41.1% (regional) and 41.8% (provincial). The percentage of participants reporting that at least some action was being taken was 67.8% (national), 63.6% (regional) and 66% (provincial). The means of the stages of development of the mechanisms to track and report on physical inactivity for the three country levels ranged from 3.96 (provincial) to 4.03 (national), with mean development increasing from the national to the provincial levels. These means were equivalent to stage D development for all three levels (national, regional and provincial levels).
Mechanisms to track and report on social and environmental risk factors

Participants were asked to identify the stage of development of mechanisms to track and report on social and environmental risk factors for NCDs at the national level (see Table 78).

Table 78. Mechanisms to track and report on social and environmental risk factors

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, regional and provincial levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>5.5</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>20.0</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>27.3</td>
</tr>
<tr>
<td>D - Under development</td>
<td>14.5</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>1.8</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>30.9</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>109</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 3.80, SD = 1.68

The largest group of participants answered that mechanisms to track and report on social and environmental risk factors had ‘not currently been actioned’ (30.9%). The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 25.5%. The percentage of participants reporting that at least some action was being taken was 69.1%. The mean stage of development of mechanisms to track and report on social and environmental risk factors was 3.80. This mean was equivalent to stage D development.

Mechanisms to track and report on activities that promote health

Participants were asked to identify the stage of development of mechanisms to track and report on activities that promote health at the national, regional (governorate) and provincial (wilayat) levels (see Table 79).
Table 79. Mechanisms to track and report on activities that promote health

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, regional and provincial levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>9.1</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>27.3</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>27.3</td>
</tr>
<tr>
<td>D - Under development</td>
<td>10.9</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>5.5</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total (without don’t know)</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 3.36, SD = 1.60

The largest group of participants answered that mechanisms to track and report on activities to promote health had ‘actioned’ (27.3%). The percentage of participants reporting that mechanisms were at the ‘fully’ or ‘partially implemented’ stage of development was 36.4%. The percentage of participants reporting that at least some action was being taken was 80.2%. The mean stage of development for mechanisms to track and report on activities to promote health was 3.36. This mean was equivalent to stage C development.

4.1.5.8. Domain 8: Health Promotion financing

The subsections below present the participants’ responses in relation to Health Promotion financing.

4.1.5.8.1. Dedicated government funding for activities that improve health

Participants were asked to choose between ‘Yes’, ‘No’ or ‘Don’t know’ with respect to whether there is dedicated government funding for activities that improve health (see Table 80).

Table 80. Dedicated government funding for activities that improve health

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25.4</td>
<td>29</td>
</tr>
<tr>
<td>No</td>
<td>28.1</td>
<td>32</td>
</tr>
<tr>
<td>Don’t know</td>
<td>46.5</td>
<td>53</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 25.4%; 28.1% answered ‘no’.

199
4.1.5.8.2. Separate budget line for Health Promotion

Participants were asked to identify the stage of development of a separate budget line for Health Promotion at the national, regional (governorate) or provincial (wilayat) levels (see Table 81).

Table 81. Separate budget line for Health Promotion

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, regional and provincial levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>3.6</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>32.1</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>21.4</td>
</tr>
<tr>
<td>D - Under development</td>
<td>3.6</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>3.6</td>
</tr>
<tr>
<td>F - Not currently actioned</td>
<td>35.7</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
<tr>
<td>G - Don’t know</td>
<td>164</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 3.79, SD = 1.83

The largest group of participants answered that a separate budget line had ‘not currently been actioned’ (35.7%). The percentage of participants reporting that this intervention was at the ‘fully’ or ‘partially implemented’ stage of development was 35.7%. The percentage of participants reporting that at least some action was being taken was 64.3%. The mean stage of development with respect to a separate budget line for Health Promotion was 3.79. This mean was equivalent to stage D development.

4.1.5.8.3. Funding of Health Promotion from dedicated taxes or levies on tobacco, alcohol, petrol and other products and services

Participants were asked to identify the stage of development of arrangements for the funding of Health Promotion from dedicated taxes or levies on tobacco, alcohol, petrol or other products and services (see Table 82).
Table 82. Funding of Health Promotion from dedicated taxes

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>National, regional and provincial levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>A - Fully implemented</td>
<td>3.7</td>
</tr>
<tr>
<td>B - Partially implemented</td>
<td>33.3</td>
</tr>
<tr>
<td>C - Actioned</td>
<td>18.5</td>
</tr>
<tr>
<td>D - Under development</td>
<td>11.1</td>
</tr>
<tr>
<td>E - Being considered</td>
<td>11.1</td>
</tr>
<tr>
<td>F - Not currently auctioned</td>
<td>22.2</td>
</tr>
<tr>
<td>Total (without don’t know)</td>
<td>100</td>
</tr>
</tbody>
</table>

National, Regional and Provincial Mean: 3.59, SD = 1.67

The largest group of participants answered that funding from dedicated taxes had been ‘partially implemented’ (33.3%). The percentage of participants reporting that these interventions were at the ‘fully’ or ‘partially implemented’ stage of development was 37.0%. The percentage of participants reporting that at least some action was being taken was 77.8%. The mean stage of development with respect to funding for Health Promotion from dedicated taxes or levies was 3.59. This mean was equivalent to stage D development.

4.1.5.8.4. Funding for the surveillance, monitoring and evaluation of NCD prevention activities/functions

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ with respect to whether there is funding for the surveillance, monitoring and evaluation of NCD prevention activities/functions (see Table 83).

Table 83. Funding for the surveillance, monitoring and evaluation of NCD prevention activities

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40.0</td>
<td>44</td>
</tr>
<tr>
<td>No</td>
<td>13.6</td>
<td>15</td>
</tr>
<tr>
<td>Don't know</td>
<td>46.4</td>
<td>51</td>
</tr>
</tbody>
</table>

The percentage of participants who answered ‘yes’ was 40.0%; 14.6% answered ‘no’.
4.1.5.8.5. Funding for Health Promotion capacity-building for activities/functions aimed at the prevention and control of NCDs

Participants were asked to choose between Yes’, ‘No’ and ‘Don’t know’ with respect to whether there is funding for Health Promotion capacity-building for activities/functions aimed at the prevention and control NCDs (see Table 84).

| Table 84. Funding for Health Promotion capacity-building for NCD prevention |
|-----------------------------|------|------|
|                             | %    | N    |
| Yes                         | 33.0 | 37   |
| No                          | 16.1 | 18   |
| Don't know                  | 50.9 | 57   |

The percentage of participants who answered ‘yes’ was 33.0%; 16.1% answered ‘no’.

4.1.5.8.6. Identification of the major sources of funding for the prevention and control of NCDs

Participants were asked to identify the major sources of funding for the prevention and control of NCDs (see Table 85).

| Table 85. The major sources of funding for the prevention and control of NCDs |
|-------------------------------|------|------|
| Stage of Development          | %    | N    |
| General government revenues   | 56.3 | 63   |
| Health insurance              | 11.6 | 13   |
| International donors          | 13.4 | 15   |
| Earmarked taxes on alcohol, tobacco, etc. | 6.3 | 7 |
| Don't know                    | 37.5 | 42   |
| Other                         | 9.8  | 11   |

The funding source that was selected most frequently was ‘general government revenues’ (n = 63), followed by ‘don’t know’ (n = 42). The source of funding that was selected least frequently was ‘earmarked taxes on alcohol, tobacco’ (n=7).

4.1.5.9. Summary of Phase 2 quantitative findings

The mean values for each stage of development questions (ranging from 1 to 6) were calculated, with ‘don’t know’ responses excluded. The mean of these values was then
obtained for each domain (called the domain score). These domain scores were subsequently converted to grades using the grading system outlined in Table 86. Finally, the mean of the domain scores was calculated to get the overall mean. The scores/grades in the capacity wheel in terms of stage of development, definition and score range are shown in Table 86 below.

Table 86. Stages of development by score range and grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
<th>Mean Grade = Score range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Fully implemented</td>
<td>This means that the activity is totally in place and working well for all Health Promotion priorities at the national level, and evaluation and monitoring evidence is available.</td>
<td>Mean A = 5.5–6.0</td>
</tr>
<tr>
<td>B: Partially implemented</td>
<td>This means that the activity is partially in place and now in operation for some, or all, of the Health Promotion priorities at the national level, and some evaluation and monitoring evidence is available.</td>
<td>Mean B = 4.5–5.49</td>
</tr>
<tr>
<td>C: Actioned</td>
<td>This means that work has started but that is too early to assess the impact or outputs at the national level, and there has been no evaluation and monitoring evidence up to date.</td>
<td>Mean C = 3.5–4.49</td>
</tr>
<tr>
<td>D: Under development</td>
<td>This means that there has been a commitment on the national level to implement the activity, and that work is under way to develop it</td>
<td>Mean D = 2.5–3.49</td>
</tr>
<tr>
<td>E: Being considered</td>
<td>This means that the activity is being considered for implementation, but no firm commitment has yet been given.</td>
<td>Mean E = 1.5–2.49</td>
</tr>
<tr>
<td>F: Not currently auctioned</td>
<td>This means that the activity has either not been considered or has been rejected for implementation at this level</td>
<td>Mean F = 1.0–1.49</td>
</tr>
<tr>
<td>G: Don't know</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The domains, domain scores and stage of development are shown in Table 87 below.

Table 87. Domains, domain scores and stage of development

<table>
<thead>
<tr>
<th>Domain</th>
<th>Domain score</th>
<th>Stage of development (grade)</th>
<th>Stage of development (definitions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies and plans</td>
<td>4.28</td>
<td>C</td>
<td>Actioned</td>
</tr>
<tr>
<td>Core of expertise</td>
<td>4.57</td>
<td>B</td>
<td>Partially implemented</td>
</tr>
<tr>
<td>Collaborative mechanism</td>
<td>4.15</td>
<td>C</td>
<td>Actioned</td>
</tr>
<tr>
<td>Programme delivery</td>
<td>2.75</td>
<td>D</td>
<td>Under Development</td>
</tr>
<tr>
<td>Partnership</td>
<td>3.85</td>
<td>C</td>
<td>Actioned</td>
</tr>
<tr>
<td>Professional development</td>
<td>3.84</td>
<td>C</td>
<td>Actioned</td>
</tr>
<tr>
<td>Information systems</td>
<td>3.28</td>
<td>D</td>
<td>Under Development</td>
</tr>
<tr>
<td>HP financing</td>
<td>3.24</td>
<td>D</td>
<td>Under Development</td>
</tr>
</tbody>
</table>

The Oman Health Promotion Capacity for NCD prevention wheel, which presents this data in a visual way, is shown in Figure 9 below.

Figure 9. The Oman Health Promotion Capacity Interventions for NCDs Wheel
The overall average grade was C (mean = 3.75, range 2.75–4.57), which means ‘Actioned’, work had started but that it was too early to assess the impact or outputs at the national level, and that there had been no evaluation and monitoring evidence to date (Catford, 2005). The range of grades in the Health Promotion capacity for the NCD wheel in Oman was from low B to D, where B means that the activity was partially in place and in operation for some, or all, of the Health Promotion priorities at a national level, and D means that there had been a commitment at the national level to implement the activity and that work was under way to develop it.

The results revealed one low B ‘Partially implemented’ in the domain core of expertise capacity, C ‘Actioned’ in four domains (policies and plans, collaboration, partnership and professional development) and D ‘Under development’ in three Domains: programme delivery, information systems and Health Promotion financing. The lowest scoring domain was programme delivery (Mean = 2.75).

4.1.5.10. Demographic characteristics of the full and reduced sample

The quantitative survey returned a high level of missing data which required further analysis of the possible reasons for low response rates to questions in the survey. In order to investigate the potential impact of this on the findings, further analysis of all those who responded to every question was undertaken and compared to the full sample. In the subsections below the reduced sample’s responses to demographic questions are compared to those of the full sample.

4.1.5.10.1. Language of response

Participants responded to the survey in Arabic and English (see Table 88 below).

Table 88. Language used by participants

<table>
<thead>
<tr>
<th>Language</th>
<th>Full Sample</th>
<th>Reduced Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Arabic</td>
<td>188</td>
<td>61.4</td>
</tr>
<tr>
<td>English</td>
<td>118</td>
<td>38.6</td>
</tr>
</tbody>
</table>
There was less than a 1% difference in percentage of responses between full and reduced samples for languages used by participants.

4.1.5.10.2. Health Promotion activities among the full and reduced samples

In the full sample, 94.5% of participants were involved in Health Promotion activities, and thus, 5.5% were involved only in non-Health Promotion activities. In contrast, in the reduced sample, 97.1% of participants were involved in Health Promotion activities, and thus, 2.9% were involved only in non-Health Promotion activities. Table 89 shows the percentage of the participants involved in Health Promotion activities versus non-Health Promotion activities in full and reduced samples.

Table 89. Health Promotion activities versus non-Health Promotion activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Full Sample</th>
<th>Reduced Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Health Promotion activities</td>
<td>240</td>
<td>94.5</td>
</tr>
<tr>
<td>Non-Health Promotion activities</td>
<td>14</td>
<td>5.5</td>
</tr>
</tbody>
</table>

The difference in number of responses between full and reduced samples for Health Promotion activities versus non-Health Promotion activities was less than 3%.

4.1.5.10.3. Work sector of the participants

Participants were asked which sector they worked in (MOH, government sector or non-government sector). Table 90 shows the number of participants who worked in each sector in the full sample and the reduced sample.

Table 90. Participants by work sector

<table>
<thead>
<tr>
<th>Work sector</th>
<th>Full Sample</th>
<th>Reduced Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Ministry of Health</td>
<td>200</td>
<td>68.0</td>
</tr>
<tr>
<td>Other government sector</td>
<td>45</td>
<td>15.3</td>
</tr>
<tr>
<td>Non-government sector (NGO) and private</td>
<td>49</td>
<td>16.7</td>
</tr>
</tbody>
</table>
There was less than a 2% difference in the percentage of responses by work sector between the full and reduced samples.

4.1.5.10.4. Area of particular expertise of the participants

Participants were asked their area of professional expertise. A comparison between the full and reduced samples is shown in Table 91 below.

**Table 91. Area of particular expertise**

<table>
<thead>
<tr>
<th>Area of expertise</th>
<th>Full Sample</th>
<th></th>
<th>Reduced Sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Public health expertise</td>
<td>171</td>
<td>59.8</td>
<td>94</td>
<td>62.7</td>
</tr>
<tr>
<td>Clinical expertise</td>
<td>60</td>
<td>21.0</td>
<td>30</td>
<td>20.0</td>
</tr>
<tr>
<td>Academia</td>
<td>22</td>
<td>7.7</td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
<td>11.5</td>
<td>17</td>
<td>11.3</td>
</tr>
</tbody>
</table>

There was less than a 3% difference in the percentage of responses between full and reduced samples for areas of particular expertise.

4.1.5.10.5. Occupation

Participants were asked their area of professional expertise. A comparison between the full and reduced samples is shown in Table 92 below.

**Table 92. Participants by occupation**

<table>
<thead>
<tr>
<th>Occupation of the participants</th>
<th>Full Sample</th>
<th></th>
<th>Reduced Sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Doctor</td>
<td>92</td>
<td>31.1</td>
<td>49</td>
<td>32.2</td>
</tr>
<tr>
<td>Public health specialist</td>
<td>75</td>
<td>25.3</td>
<td>49</td>
<td>32.2</td>
</tr>
<tr>
<td>Health director</td>
<td>31</td>
<td>10.5</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>Nurse</td>
<td>29</td>
<td>9.8</td>
<td>12</td>
<td>7.9</td>
</tr>
<tr>
<td>Academic</td>
<td>25</td>
<td>8.4</td>
<td>13</td>
<td>8.6</td>
</tr>
<tr>
<td>Health consultant</td>
<td>7</td>
<td>2.4</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>37</td>
<td>12.5</td>
<td>10</td>
<td>6.6</td>
</tr>
</tbody>
</table>

There were some minor differences in the percentages by work sector, except for in the case of public health specialists, who were over-represented in the reduced sample by 7%.
Accordingly there were fewer participants who reported their work sector as ‘other’ in the reduced sample.

4.1.5.10.6. Ottawa Charter actions employed by participants to improve health

Participants were asked to choose any of the five Ottawa Charter Health Promotion strategic actions that they have used to improve health. They could choose more than one answer for the work sectors of participants, as shown in Table 92. Table 93 shows the percentage of participants involved in the respective Ottawa Charter Health Promotion strategic actions in the full and reduced samples.

Table 93. Participants involved in Health Promotion strategic actions

<table>
<thead>
<tr>
<th>Ottawa Charter Health Promotion strategic actions</th>
<th>Full Sample</th>
<th>Reduced Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building healthy public policy</td>
<td>146 47.7</td>
<td>79 51.0</td>
</tr>
<tr>
<td>Creating supportive environments</td>
<td>159 52.0</td>
<td>77 49.7</td>
</tr>
<tr>
<td>Strengthening community action</td>
<td>163 53.3</td>
<td>96 61.9</td>
</tr>
<tr>
<td>Developing personal skills</td>
<td>182 59.5</td>
<td>96 61.9</td>
</tr>
<tr>
<td>Reorienting health services</td>
<td>162 52.9</td>
<td>88 56.8</td>
</tr>
</tbody>
</table>

There was a less than 9% difference in number of responses between the full and reduced samples for all categories of Health Promotion strategic actions. There were about 9% more respondents who engaged in strategic community action in the reduced sample. Thus the reduced sample included those with more direct experience of Health Promotion actions.

In conclusion, in phase two, the number of respondents not answering individual questions ranged from 10 to 258 (258 was the missing score for the first question in both Domains 3 and 4). The lower rates of missing values (10-52) were for demographics questions, which are easier to answer. The missing data started to increase in the Health Promotion-related questions.
4.1.5.10.7. Differences in responses to the capacity mapping tool between the full and reduced sample

A comparison between the capacity wheel created with the data provided from the reduced sample (n=155), with the capacity wheel from the full sample (n=306), is presented in Figure 10 below.

![Comparison capacity wheel for full and reduced sample](image)

**Figure 10. Comparison capacity wheel for full and reduced sample**

Table 94 below shows the comparison of domain scores and stage of development between the reduced sample for only 155 participants with the full sample 306 participants.
Table 94. Comparison between Wheel domains, domain scores and stage of development

<table>
<thead>
<tr>
<th>Domain</th>
<th>Reduced Sample</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domain score</td>
<td>Stage of development (grade)</td>
</tr>
<tr>
<td>Policies and plans pertaining to HP</td>
<td>4.34</td>
<td>C</td>
</tr>
<tr>
<td>Core of expertise</td>
<td>4.53</td>
<td>B</td>
</tr>
<tr>
<td>Collaborative mechanism</td>
<td>4.31</td>
<td>C</td>
</tr>
<tr>
<td>Programme delivery</td>
<td>4.21</td>
<td>C</td>
</tr>
<tr>
<td>Partnership</td>
<td>3.85</td>
<td>C</td>
</tr>
<tr>
<td>Professional development</td>
<td>3.84</td>
<td>C</td>
</tr>
<tr>
<td>Information systems</td>
<td>3.95</td>
<td>C</td>
</tr>
<tr>
<td>HP financing</td>
<td>3.31</td>
<td>D</td>
</tr>
</tbody>
</table>

The overall grade was C for the reduced sample (mean = 3.6, range 3.5–4.49), which means ‘Actioned’; i.e. work had started but that it was too early to assess the impact or outputs at the national level, and there had been no evaluation and monitoring evidence at the date of the survey (Catford, 2005). The range of grades in the Health Promotion capacity for the NCD wheel in Oman in the reduced sample was from low B to D, where B means that the activity was partially in place and in operation for some, or all, of the Health Promotion priorities at a national level, and D means that there had been a commitment at the national level to implement the activity and that work was under way to develop it.

In the reduced sample, the results revealed one low B ‘Partially implemented’ in the Core of Expertise capacity domain, C ‘Actioned’ in six domains (policies and plans, collaboration, programme delivery, partnership, professional development and information systems) and D ‘Under development’ in only one domain, which is Health Promotion Financing. The lowest scoring domain was financing (Mean=3.31).

A comparison of the reduced sample wheel with the full sample wheel shows that there have been improvements in two domains in the reduced wheel. First is Domain 4 programme delivery, which improved from D ‘Under development’ (Mean= 2.75) to C ‘Actioned’ (Mean= 4.21), and second is Domain 7 information systems, which improved from D ‘Under development’ (Mean= 3.28) to C ‘Actioned’ (Mean= 3.84).
development’ (Mean= 3.28) to C ‘Actioned’ (Mean= 3.95). In contrast, health promotion financing continued to be a gap area even though it had improved a little from D ‘Under development’ (Mean= 3.24) to D ‘Under development’ (Mean= 3.31).

4.2. Analysis of the Qualitative Study (Phase Three)

4.2.1. Thematic template analysis process

Template analysis was performed using Microsoft Word. Template analysis involved organising and analysing textual data according to themes that can be used in the context of evaluation irrespective of the evaluation activity (Brooks et al., 2015). Five out of ten transcripts were chosen to develop the initial template (the first template), based on the interviewees’ level of knowledge and power in Health Promotion while also ensuring representation of various sectors. Template analysis usually requires a priori themes (themes defined in advance based on the theoretical or pragmatic interests of the study). The eight domains used in the quantitative study were considered to be the a priori themes to start the analysis.

A codebook was produced to include highlighted codes, which were phrases or sentences or ideas in the text that contributed understanding regarding the eight a priori themes (i.e., the eight domains). The analysis was done in seven steps.

Step 1: A preliminary coding process was started to develop a coding scheme, called Coding Scheme 1, in which the coding of any relevant data resulted in theme 1 Domains of Health Promotion capacity for NCD prevention in Oman.

Step 2: In the second coding scheme, which was named Coding Scheme 2, eight themes were developed. Seven themes were produced from responses to the seven general qualitative questions. The eighth theme was theme 1 from Coding Scheme 1, Domains of Health Promotion capacity for NCD prevention in Oman. Cluster coding was used to develop the eight themes. The second coding scheme included the following themes:
I. Domains of Health Promotion capacity for NCD prevention in Oman
II. Perceptions about Health Promotion capacity to prevent and control NCDs
III. Health Promotion capacity improvement
IV. Gaps in Health Promotion capacity in Oman
V. Solutions to the three gaps
VI. Low Health Promotion capacity to prevent and control NCDs in the regions and wilayats
VII. SWOT analysis of the Health Promotion capacity to prevent and control NCDs
VIII. Suggestions for strengthening government support

Step 3: For Coding Scheme 3, a systematic arrangement of the codes was conducted according to the hierarchical level of the theme. Hierarchical coding was undertaken according to the research question. Hierarchical coding is a process whereby groups of similar codes are clustered together to produce more general higher-order themes. “Hierarchical coding allows for analysis of the textual data at varying levels of specificity, and for researchers to focus in greater detail on areas of particular interest or meaning in relation to their research aims” (King & Brooks, 2017, p. 34). ‘Top level or main themes may be elaborated in some detail through the use of sub-themes, and there can be as many levels of coding as the researcher deems helpful in exploring their research question’ (King & Brooks, 2017, p.35). In this study, hierarchical coding involved organising codes from the eight themes in the first and second coding schemes into a hierarchy of different levels (labelled from 1 to 5).

In the on-going process of organisation and analysis, theme 3 ‘Health Promotion capacity improvement’, theme 5 ‘Solutions to the three gaps’ and theme 7 ‘SWOT analysis of the Health Promotion capacity to prevent and control NCDs’ were integrated into the first theme ‘Domains of Health Promotion capacity for NCDs prevention in Oman’. Similarly, theme 6 ‘Low Health Promotion capacity to prevent and control NCDs in the regions and wilayats’ was integrated with theme 2 ‘General Perception about Health Promotion capacity map for NCDs in Oman’.
Step 4: First template: All earlier schemes were organised and analysed using the codes to produce the ‘initial’ template for further data analysis. This process resulted in four hierarchically-organised themes in the initial template:

I. Domains of Health Promotion capacity for prevention of NCDs in Oman
II. General perceptions and knowledge about the Health Promotion capacity map to prevent and control NCDs in Oman
III. Gaps in Health Promotion capacity in Oman
IV. Suggestions for government support in improving Health Promotion capacity for NCDs in Oman

Step 5: Second template: The initial template was applied to the remaining transcripts; codes from the second five transcripts were added to the initial template in two stages (the first three transcripts and then two), resulting in the second template.

Step 6: Third template: The development of the third template used an iterative process of organisation and analysis of the second template. Theme 3 ‘Gaps in Health Promotion capacity in Oman’ was integrated into the first theme ‘Domains of Health Promotion capacity for NCDs prevention in Oman’ to end with the final three themes as follows:

I. Domains of Health Promotion capacity for NCDs prevention in Oman
II. General perceptions about Health Promotion capacity-mapping for NCDs in Oman
III. Recommendations to the government for improving the Health Promotion capacity in Oman

Step 7: Fourth template: The template analysis method involves an iterative process of organising data, therefore the third template was further organised, and more analysis was carried out to generate a better balance between positive and negative points by adding more positive points, thus giving a clearer picture of what already exists (IUHPE, 2011, Aluttis et al., 2014). The initial template can be found in Appendix H while the final, fourth, template is presented below.
Step 8: Themes, codes and quotes: Tables 96, 97 and 98 were devised to set out the themes, codes and sub-codes that comprise the fourth template, together with sample quotations.

4.2.2. Results of the third qualitative phase
Table 95 below shows the definition of the themes that contributed to the fourth template analysis, together with sample quotations from participants. Quotations were specifically chosen for inclusion as exemplars of the sub-codes.
**Table 95. Explanation of themes in the fourth template**

<table>
<thead>
<tr>
<th>Theme title and definition</th>
<th>Definition</th>
<th>Example of definitions and quotations</th>
</tr>
</thead>
</table>
| **Domains of Health Promotion capacity for NCDs in Oman** | The eight domains of the Health Promotion capacity map for prevention and control NCDs in Oman | i. Policies and plans  
ii. Core of expertise  
iii. Collaboration  
iv. Programme delivery  
v. Partnership  
vi. Professional development  
vii. Information systems  
viii. Financing |
| **General perceptions about Health Promotion capacity-mapping for NCDs in Oman** | Extent to which interviewees agree or disagree with the grades from the quantitative study for the eight domains of Health Promotion capacity for NCDs in Oman | ‘Agree with the findings’.  
‘It represents the Health Promotion capacity in Oman at present’.  
‘The Health Promotion map is unique’. |
| **Recommendations to the government for improving the Health Promotion capacity in Oman** | Interviewees’ suggestions regarding the role of government in improving the Health Promotion capacity for the prevention of NCDs in Oman. | ‘There should be] A government mandate to the other sectors to build their health promotion capacity to prevent NCDs’.  
‘To adopt the plan of action by the Council of Ministers is needed’. |
### 4.2.3. Final Qualitative Thematic Analysis: Template 4

Table 96 below presents the fourth thematic template for the first theme, including sub-themes, codes and sample quotations. Thus, it represents the full analysis of the interview data.

**Table 96. Domains of the Health Promotion capacity in Oman: sub-codes and sample quotations**

<table>
<thead>
<tr>
<th>Themes and codes</th>
<th>Sample Quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.1 Policies and plans</strong></td>
<td></td>
</tr>
<tr>
<td>1.1.1. Needs</td>
<td>'Policy and plan of action of health promotion for NCD has to come from higher government entities, either from the supreme council, from the ministerial council or even higher'.</td>
</tr>
<tr>
<td>1.1.1.2. Policies and plans need to be adequate, sufficient and specific</td>
<td>'Having specific NCD policies is more helpful and useful in trying to get multi-sectoral support'.</td>
</tr>
<tr>
<td>1.1.1.3. Need to translate the concept of ‘health in all policies’ into action</td>
<td>'Collaboration and partnership are important to develop standalone health promotion policy in order to translate the concept of health in all policies into action'.</td>
</tr>
<tr>
<td><strong>1.1.2. Infrastructure</strong></td>
<td></td>
</tr>
<tr>
<td>1.1.2.1. There is an existing health policy for NCDs</td>
<td>'Launch health promotion policies for prevention and control of NCDs. Some policies and laws might be there but further work needs to be done on building capacity to implement them'.</td>
</tr>
<tr>
<td>1.1.2.2. Need for Health Promotion capacity to implement, monitor and strengthen Health Promotion policies</td>
<td>'Oman is not yet able to monitor the health promotion policies'. 'There is a deficiency in the monitoring of health promotion programmes which causes gaps'.</td>
</tr>
<tr>
<td>1.1.2.3.</td>
<td>Need to increase awareness regarding Health Promotion policies and knowledge by working with other sectors</td>
</tr>
<tr>
<td>1.1.2.4.</td>
<td>Need for infrastructure required for the implementation of policies</td>
</tr>
<tr>
<td>1.1.3.</td>
<td>Implementation</td>
</tr>
<tr>
<td>1.1.3.1.</td>
<td>Policies exist but often are not implemented, or are only partially implemented</td>
</tr>
<tr>
<td>1.1.3.2.</td>
<td>Policies and plans need a well-established source of financing support for implementation</td>
</tr>
<tr>
<td>1.1.3.3.</td>
<td>Allocation of financial resources to the plan of action for Health Promotion capacity to prevent NCDs</td>
</tr>
<tr>
<td>1.1.3.5.</td>
<td>Time taken to finalise plans and policies</td>
</tr>
<tr>
<td>1.1.4.</td>
<td>Commitment</td>
</tr>
<tr>
<td>1.1.4.1.</td>
<td>Commitment from the policymakers within the MOH and the cabinet and should be translated into action</td>
</tr>
<tr>
<td>1.1.4.2. Political agreement</td>
<td>‘The country needs to create legislative rules and regulations that will control the role of each of the government or non-government organisations when it comes into health promotion, by regulating the selling of cigarettes’.</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.1.4.4. Follow up of implementation at a higher level in government</td>
<td>‘To have a higher body for implementation of the plan of action’.</td>
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<td>1.1.5. Multi-sectoral approach, collaboration and partnership are required</td>
<td>1.1.5.1. Need for policymaking through collaboration and partnership</td>
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<tr>
<td>1.1.5.2. Need to include all stakeholders (government, private sector and community)</td>
<td>‘There is a need to include all stakeholders, government, private sector and community’ ‘Health promotion policy does not include only the staff at MOH, but it involves all institutes in the government, and in the private sector, as well as the general public or the community in Oman. ‘To formulate the policy and development of the strategic plan that covers all the important components and all members from the policymakers to the end users’.</td>
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<tr>
<td>1.1.5.3. Need for the support of the MOH to other sectors in the process of developing Health Promotion capacity</td>
<td>‘There is no delegation of roles and responsibilities among multi-sectors that work on health promotion and NCDs’ ‘It takes a long time to finalise plans and policies in Oman, and</td>
</tr>
<tr>
<td>1.1.5.4. There is a need for higher level authorities in the government to adopt a plan of action</td>
<td>‘Health promotion of action adopted by higher level authorities in the government’.</td>
</tr>
<tr>
<td>1.1.5.5. Delegation of roles and responsibilities is required</td>
<td>‘By making governmental sectors fully understand their roles and responsibilities, each ministry should know their indicators and plan, and their strategic actions and they should achieve it within a time limit’.</td>
</tr>
<tr>
<td>1.1.5.6. Implementation and monitoring in other sector</td>
<td>‘There is deficiency in the implementation and monitoring of health promotion in other sectors which causes a gap in health promotion capacity in Oman’</td>
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<td>1.1.5.7. Ownership</td>
<td>‘Bring private sector NGOs with the government all together to implement and involve them in preparing the policy. They will feel that they have an ownership of that programme. Then, they can work on that programme smoothly’.</td>
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<tr>
<td>1.1.6. Strategic plan</td>
<td>1.1.6.1. Need for a strategic plan to force all stakeholders to stick to the policy formulation process</td>
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<tr>
<td>1.1.6.2. The strategic plan should cover all important issues with members from policymakers to end users.</td>
<td>‘Formulate the policy and develop a strategic plan that covers all the important components and all members from the policymakers to the end users’.</td>
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<tr>
<td>1.1.7. Monitoring and evaluation</td>
<td>1.1.7.1. Monitoring, evaluation and impact studies of policies and plan of action are important</td>
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| 1.1.7.2. Need for a framework for monitoring and evaluation to follow implementation of the Health Promotion plan of action | ‘Develop a framework for monitoring and evaluation to follow the implementation of health promotion plan of action’.

| 1.1.7.3. External evaluation | ‘An external evaluator is needed to evaluate these plans and say how much was achieved and how much still remains beyond achievement’.

| **1.2. Core of expertise in Health Promotion** |
|---|---|
| **1.2.1. There is a need for Health Promotion leadership and expertise** |
| **1.2.1.1. Core of expertise and leadership at various levels (within the national MOH) required** | ‘There is no core expertise and leadership within the national MOH for health promotion development, coordination and partnerships’.

‘Oman has no infrastructure for health promotion to prevent NCDs within the MOH as well as in some other key ministries’.

‘Lack of awareness of the idea or the concept of health promotion by all partners, especially the leaders and policymakers in the health sector itself causes’.

| **1.2.2 Health Promotion Unit** |
| **1.2.2.1. Need for identifiable ‘Health Promotion’ unit/section/centre/department within the Ministry or in the government** | ‘There is no identifiable “health promotion” unit/section/centre/department within the Ministry, or in the government’

‘Oman did not have even a small unit for health promotion with one or two people working'}
| 1.2.3. Health Promotion vs. health education | 1.2.3.1. Need to specify health education’s role | ‘Clarify that health promotion is about how to act to change the environment to make it more conducive to health and what we are actually going to do to improve people’s health’. ‘Using a Health education strategy only is not effective enough to change behaviours or to improve NCDs’ prevention and control’ |
| 1.2.3.2. Need to raise awareness that health education is inadequate to prevent and control NCDs | ‘Clarify that health promotion does not mean health education and that health education is inadequate to prevent and control NCDs’ |
| **1.3. Collaborative mechanism between government sectors and ministries** | 1.3.1. Collaboration between ministries and other sectors is required | **1.3.1.1. Gap in collaboration between the MOH and other ministries, sectors, NGOs, etc. which need to be strategically overcome.** |
| | ‘The gap in collaboration is because Oman has no health council that can regulate everything related to collaboration and partnership’. ‘There is not enough collaborations between MOH departments and other government sectors’. |
| | 1.3.1.2. Duplication and missing activities due to lack of strategic collaboration | ‘Lack of collaboration with other sectors either within the ministry or with external agencies causes duplication of activities and some activities is missing and nobody is taking care of them’ |
| | | ‘There are duplications of activities, some activities are missing and nobody is taking care of them’ |

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<tr>
<td>1.3.1.3. Technical guidance for other sectors required</td>
<td>‘Technical guidance is needed on how other sectors can do a better job to benefit the health of the people in Oman’</td>
</tr>
<tr>
<td>1.3.1.4. Need for organisational capacity-building and role of leadership</td>
<td>‘Improve the organisational capacity of buildings. They should have a leadership role, and because they are providing technical expertise, they should provide some innovative learning to compute the Oman resources development’.</td>
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<tr>
<td>1.3.1.5. Need for active and effective participation within ministries</td>
<td>‘We now have the national NCD committee in collaboration with a lot of important ministries that deal with NCDs and health promotion in sultanate of Oman chaired by the secretary of planning, like ministry of agriculture, ministry of commerce and ministry of physical activity. However, despite the presence of collaboration, active and effective participation is required from these ministries’.</td>
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<tr>
<td>1.3.1.6. Need to focus on Wilayats and governorates</td>
<td>‘Other ministries should take the message of the process of active and effective participation in NCDs and health promotion to the periphery, to the Wilayats and to the governorates where a lot of things also should be done’.</td>
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<td>1.3.2. Target groups and health issues</td>
<td>‘Target groups that are in need are missing because of no effective collaboration (e.g., children, women, teenagers and old people)’.</td>
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<tr>
<td>1.3.2.2. Health Promotion</td>
<td>‘the physical activity among community members, we have really to collaborate with the ministry of municipality for example, or the ministry of sports, to create centres for the public to go and do the exercise’.</td>
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<tr>
<td>collaborative interventions on physical activity required</td>
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<td>1.3.2.3. Tax on smoking.</td>
<td>‘If you want to control for example prevalence of hypertension, diabetes or hyperlipidaemia, we have to collaborate with the ministry of industry by adding tax for example on smoking and earmarking any activities for health promotion’</td>
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<td>1.3.2.3. Food regulation is required.</td>
<td>‘Do not know what’s happening in the country regarding nutrition’</td>
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<td></td>
<td>‘Regulating selling of junk food’</td>
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<td></td>
<td>‘Controlling restaurants, the type of food they sell, like the junk food’</td>
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<tr>
<td>1.3.3. Shared vision</td>
<td>‘Partnerships with governmental sector, NGOs and the private sector can be made by having a shared vision with these sectors by making them fully understand their roles and responsibilities’.</td>
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<tr>
<td>1.3.3.1. Need for governmental sectors to fully understand their roles and responsibilities</td>
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<tr>
<td>1.3.3.2. Each ministry should know their indicators, plan of action and strategic action</td>
<td>‘By making governmental sectors fully understand their roles and responsibilities, each ministry should know their indicators and plan strategic action, and they should achieve it in the given time limit’.</td>
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<td>1.3.3.3. Successful stories of collaboration from different countries required</td>
<td>‘Developing collaboration by explaining to them successful stories of collaboration from different countries’.</td>
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<td>1.3.3.4. Need to develop collaboration by shared planning</td>
<td>‘Developing collaboration by having a shared plan of action,</td>
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### 1.4 Programme Delivery

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<tr>
<th>1.4.1. Budget and financing</th>
<th>1.4.1. Oil price crisis</th>
<th>‘Oman had a problem with oil prices in the past few years, and that was one of the main reasons why several programmes were hit hard unfortunately’.</th>
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<td>1.4.1.2. Ministries need to allocate a specific budget for specific</td>
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<td>‘Ministries need to allocate a specific budget for specific’</td>
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<tr>
<th>1.3.4. There is a need for community action</th>
<th>1.3.4.1. Build individual skills to strengthen community action</th>
<th>‘to build individual skills strengthening the community action’</th>
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<tr>
<td>1.3.4.2. Need to involve the organisations to promote sustainable health behaviour environments</td>
<td>1.3.4.2. Need to involve the organisations to promote sustainable health behaviour environments</td>
<td>‘Health promotion strategy is not only for the health sector. Therefore, to overcome these gaps, we need to have a proper strategy involving other sectors’. ‘To involve the organisations to promote sustainable health behaviours and support health environments’</td>
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<td>1.3.4.3. Need to develop trust</td>
<td>1.3.4.3. Need to develop trust</td>
<td>‘To build capacity strategies and activities such as building skills, and to develop the trust and good health communication to involve individuals who are members of the communities and involve the organisations that might directly participate or benefit from the programme’.</td>
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1.4.1. Budget and financing

1.4.1.1. Oil price crisis

‘Oman had a problem with oil prices in the past few years, and that was one of the main reasons why several programmes were hit hard unfortunately’.

1.4.1.2. Ministries need to allocate a specific budget for specific

‘Ministries need to allocate a specific budget for specific’
| 1.4.2. Multi-sectoral approach is a challenge in Health Promotion programme development and delivery | ‘The multi-sectoral is a challenge for this programme.’ ‘There is no approved strategy in the monitoring of health promotion programmes which causes a gap in health promotion capacity in Oman’ |
| 1.4.3. Strategies for Health Promotion programme development and delivery required | ‘Programme delivery can be improved by having clear rules and responsibilities for every party’. ‘There are no strategic disseminations of rules under a clear strategic plan between the multiple sectors involved in Health Promotion programmes because there is no effective and efficient collaboration and partnership’. ‘Lack of proper strategic design of these programmes where the inputs, process, output and impact are planned under specific vision goals and objectives’. ‘Lack of Health Promotion professional experts that can design effective, efficient and sustainable programmes that can be implemented in equity and equality manner at the regional and wilayat levels’. |
| 1.4.3.1. No approved strategy for Health Promotion. | ‘There is no approved strategy’. |
| 1.4.3.2. Health Education strategy alone is not effective enough | ‘Develop strategic partnership with other government sectors for social responsibility that include programme delivery of’ |
### 1.4.4. Monitoring of Health Promotion programmes required

- *Evaluation, monitoring and conducting impact studies on programme deliveries*  
- *the other area is that close monitoring and evaluation of whatever programme is being proposed to the health centre*  
- *lack of monitoring and evaluation of programmes’ impact; therefore, internal and external evaluation are required*  
- *An external evaluator is needed to evaluate these plans and programmes and say how much was achieved and how much still remains beyond achievement*  

### 1.4.5. Specific programmes required

#### 1.4.5.1. Tobacco control programme interventions needed

- *Tobacco control for example is very much lagging behind*.

#### 1.4.5.2. Diet programme interventions needed

- *There is no basic understanding of what is happening in the country regarding diet, physical activity and tobacco use. Do not know what is happening in the country regarding nutrition. We do not know what is happening in nutrition in Oman, despite having four surveys in 1991, 2000, 2009 and 2017*.

#### 1.4.5.3. Physical activity programme interventions needed

- *There is no basic understanding of what is happening in the country regarding diet and physical activity*.  
- *Regulating sale junk food. Regulating and encouraging sports and physical activity in the country. Creating centres for the public to go and perform physical exercise and improve their physical activity*.

#### 1.4.5.4. Diabetes programme interventions needed

- *There is not enough care of people with diabetes with other NCDs because there is deficiency in the information systems and research*.  
- *Care of people with diabetes with other*
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<tr>
<td>1.4.6.</td>
<td>Need for clarity in the mechanism, rules and responsibilities&lt;br&gt;‘Delivery can be improved by having clear roles and responsibilities for every party involved and by developing strategic partnerships with other governmental sectors for the social responsibility that includes programme delivery of health promotion.’</td>
</tr>
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| 1.4.7. | Partnerships for programme delivery required<br>1.4.7.1. Need for a strategic partnership with other government sectors<br>‘There is no effective sustainable health promotion partnership’.<br>‘Strategic partnership can be established in a different way by statistics, by explaining to them successful stories of partnership from different countries, by having a shared plan of action, by planning with them, and by developing strategies with them’.<br>1.4.7.2. Need for collaboration with international bodies like WHO<br>‘By collaboration with international bodies like the WHO, the country may develop programmes that fit the country’s needs, but at the same time, have been practiced by many health care systems around the globe and found to be successful’.<br>1.4.7.3. Need to collaborate with all stakeholders<br>‘There is a need to include all stakeholders (government, private sector and community)’<br>1.4.8. Need for Health Promotion for strong interventions such as earmarking Health Promotion activities<br>‘Setting earmarking for any activity for health promotion’.<br>1.4.9. Need for evaluation and monitoring all Health Promotion programmes.<br>‘Evaluation, monitoring and conducting impact studies on programme deliveries’.<br>‘Close monitoring and evaluation of the programme being proposed’<br>1.4.9.1. Need for developing evaluation and monitoring systems<br>‘To have evaluation and monitoring systems’<br>1.4.9.2. Need to conduct impact studies<br>‘There is no evaluation, monitoring and impact studies of policies and plan of action’.<br>1.4.9.3. Need for advocacy<br>‘Advocate for Health Promotion programmes’.<br>‘Proper advocacy of all programmes’.<br>1.4.9.4. Need for external<br>‘There is no external evaluator to evaluate’
| 1.4.10. Need for special budgets for Health Promotion programmes | ‘There is no specific budget for Health Promotion programmes delivery that control and prevent NCDs’. ‘No special budget for any programme in Oman. No predetermined money for every activity or programme in the ministry, and that is the way the ministry has been working’. ‘Ministries need to allocate a specific budget for specific programmes’. ‘Budgets secure the sustainability of programmes’. |
| 1.4.12. Need for training | ‘Training more people on health promotion will improve the gaps in health promotion programme delivery’. |
| 1.4.13. Community involvement in programme delivery | ‘Develop strong and well-planned programmes for community involvement and engagement’. |

### 1.5. Health Promotion partnership

<p>| 1.5.1. Effective sustainable Health Promotion partnerships are required | ‘Partnerships with governmental and NGOs and the private sector is a key area that needs to be strengthened, and we can do that by having a shared vision with these sectors, by making them fully understand their roles and responsibilities’ |
| 1.5.2. Shared vision within sectors and NGOs is required | ‘There is no shared vision for health promotion among non-governmental organisations, private sectors, and the government’. |
| 1.5.3. Partnerships strategy is needed | ‘Having partnerships between government and NGOs and the private sector is a key area that needs to be strengthened’. |
| 1.5.3.1. No comprehensive Health Promotion strategy to partner the government with NGOs and the private sector | ‘Without multi-sectoral collaboration, health promotion in Oman cannot succeed’. ‘Develop a comprehensive strategy with all governmental and NGOs and private partners for health promotion’ |</p>
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<tr>
<th>1.5.3.2. Need to disseminate the Health Promotion strategy to all partners</th>
<th>‘Partnerships with NGOs, the private sector and government can be done by having a shared vision with these sectors by making them fully understand their roles and responsibilities’.</th>
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<tr>
<td>1.5.3.3. Need for technical guidance for other sectors</td>
<td>‘Provide technical guidance on how other sectors can do a better job to benefit the health of the people in Oman’.</td>
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<td>1.5.3.4. Need for clear indicators for other sectors to achieve the objectives</td>
<td>‘By showing other sectors what statistical indicators they can achieve to prevent and control NCDs’.</td>
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<td>1.5.4. Understanding roles and responsibilities among governmental and NGOs and the private sector</td>
<td>‘The private sector has a role in preventing NCDs because if we work with them, they can produce different good quality products. Take the example of food. Oman imports above 80% of food, which is very high in sugar, saturated fats and salt. Therefore, if we work with private sectors, the food industry and poultry industry, and provide sponsorship for this, then they can understand why this bad food can affect the health of people. Therefore, they will work with us on reformulating their products and improving the quality of their products’.</td>
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1.5.5. Regulations

‘The country needs to create legislative rules and regulate and encourage sports and physical activity. Creating centres for the public to go, perform physical exercise and improve their physical activity’.

‘For example, we do not have a food regulation body in Oman’.

1.5.6. Successful examples

‘And you will have a high commitment of that. Because we have seen, like in Italy and UK, if you are preparing something, a policy for dementia, and you are involving NGOs plus private sectors, everybody in one table, then you will have a good commitment altogether, and you will have a good outcome after that’.

1.5.7. Specific health issues

1.5.7.1. Need for sale of cigarette regulation and legislation

‘Regulations that will control the role of each of the government or non-government organisations when it comes to health promotion by regulating the sale of cigarettes’.

1.5.7.2. Need for food regulation

‘Regulating sale of junk food. Sit with the Ministry of agriculture, Ministry of trade, just also to put a specification for all food that enters Oman’.

1.5.7.3. Need for sports and physical activity interventions

‘Regulating and encouraging sports and physical activity in the country. Creating centres for the public to go, perform physical exercise and improve their physical activity’.

1.5.8. Need to achieve effective outcome of collaboration

‘Sit all together in one table and discuss everything’.

‘In order to improve partnership, we need to have a plan of action at different levels’

1.5.9. Need for commitment

1.5.9.1 Commitment among partners

‘… commitment of the partners is required’

1.5.9.2 Partnership to develop policy standards is required

‘Establishing partnership to develop the policy standards, we should sit together. If they are involved in our policies, then they will have a great commitment for them’.

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<th>1.5.9.3. Need for involving NGOs and the private sector</th>
<th>‘bring private sector NGOs with the government all together, and they implement, and you involve them in doing or preparing the policy, they will’</th>
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<td><strong>1.6. Health Promotion Professional development</strong></td>
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<td><strong>1.6.1. Need to increase the number of Health Promotion experts</strong></td>
<td><strong>1.6.1.1. Need for Health Promotion professionals, practitioners, researchers and policymakers</strong></td>
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<td><strong>1.6.1.2. Human resources with sufficient skills and knowledge in Health Promotion to deliver essential Health Promotion actions</strong></td>
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<td><strong>1.6.2. Need for training programmes</strong></td>
<td><strong>1.6.2.1. No Health Promotion training in Oman</strong></td>
</tr>
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<td>1.6.2.2. Need for more trained personnel at national, regional and Wilayat level</td>
<td>‘It is a common problem in several countries. The capitals are usually performing excellently, whereas the other regions are not doing that well. One reason is that the best experts are in the capital’.</td>
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<tr>
<td>1.6.2.3. Loss of interest among practitioners due to lack of leadership</td>
<td>‘It’s a common problem in several countries. The capitals are usually doing excellent, whereas the other regions are not doing that well. One reason is that the best experts are in the capital. All the resources, whether financial, physical or otherwise, all of them are being invested only in the capital or the main cities, and people tend to neglect and forget about the smaller cities and villages. Second, there is also the migration of experts from the interior regions to the major cities, where they have all the facilities and resources and better jobs are available’</td>
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<td>1.6.2.4. Lack of training institutes for Health Promotion</td>
<td>‘Oman unfortunately lacks special training centres, for example training people for physical activity or prescribed physical activity. We lack institutes for training or for specialised diets, for example, clinical dieticians’.</td>
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<td>1.6.3. Expertise within trained personnel</td>
<td>1.6.3.1. Need for a plan to develop capacity of Health Promotion personnel</td>
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| 1.6.4. Resources allocated to clinical complications of NCDs | ‘Oman unfortunately lacks special training centres, for example training people for physical activity or prescribed physical activity. We lack institutes for training or for the specialised diet, for example, clinical dieticians’. ‘The country is mainly focused on
| 1.6.5. Levels of management | 1.6.5.1. Need to target problems at all levels (from the top management to the most junior employee) | ‘Train and orient the existing manpower about what health promotion is and what are the activities that can be considered as health promotion activities and what skills that can be considered as health promotion skills’.

1.6.5.2. Need to improve existing capacity by raising awareness, training and rewards | ‘Training of more people on health promotion will improve the health promotion capacity.
Retain health promotion staff who are being trained on health promotion by encouragement and rewards to prevent them from retiring early or going to other disciplines’.

1.6.6. Lack of expertise at local levels because of the migration of experts from the interior regions to the major cities. | ‘Migration of the experts from the interior regions to the major cities, where they have all the facilities and resources and better jobs are available. This reason of lower health promotion professionals in the regions and provinces is that the best experts are in the capital’.

1.6.7. Need for training within MOH and other sectors. | ‘Working with other sectors and developing professionals in health promotion in other sectors will improve the health promotion capacity for NCDs’.
‘Working with other sectors and developing professionals in health promotion in other sectors will improve the health promotion capacity for NCDs’.

1.6.8. Need for a dedicated department for training | ‘Develop a health promotion department or unit for NCDs to be responsible for training more manpower in the field of health promotion for NCDs’.

1.7. Health Promotion information systems

1.7.1. Relevant data are required | 1.7.1.1. Lack of data on health behaviour and lifestyle are missing | ‘Information and data are not available for too many health problems’.
‘The MOH is doing frequent surveys every seven/eight years or every ten years. but these surveys did not cover
| 1.7.1.2. Lack of key performance indicators | ‘information and data are not available on various in-depth aspects of health behaviours which aid in developing Health Promotion strategies and activities’
‘Lack of key performance indicators causing low Health Promotion capacity’ |
| 1.7.1.3. Only prevalence data | ‘Information is largely just prevalence information’. |
| 1.7.1.4. Lack of focus on statistics and research | ‘There is deficiency in health promotion research’
‘Health promotion research should be improved and more research should be done’.
‘A systematic research plan in NCDs for improving the situation’. |
| 1.7.1.5. Lack of information on specific issues | ‘lack of focus on statistics and research in Health Promotion’
‘This is regarding NCDs like hypertension, cancer and diabetes, which we do not have data on until now’. |
| 1.7.1.6. Lack of monitoring of Health Promotion programmes | ‘There is a deficiency in the monitoring of health promotion programmes because of gap in health promotion capacity in Oman’. |
| 1.7.2. Lack of understanding of Health Promotion. | ‘Because of poor understanding of health promotion’.
‘Because we do not have health promotion, our lifestyle you know the people here, the message of the health didn’t reach correctly to the people’. |
| 1.7.3. Need for effective information technology | ‘The defect is in the IT departments and services which cause weakness in health promotion information systems even when the system is available, it has a lot of issues, and the system is slow. It’s incomplete and missing a lot of pieces. It
is most of the time not friendly user’
‘Information is largely just prevalent information’.

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<tr>
<th>1.7.4. Need for use of data</th>
<th>1.7.4.1 Manual health registration</th>
<th>‘Until now we are using manual health registration in health institutions, which takes longer than electronic systems; we need to design new electronic forms’</th>
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</table>
| 1.7.4.2. Lack of experts who can use the data | 1.7.4.2. Lack of experts who can use the data | ‘low number of users of this type of data’
‘No professional people to utilise the data in terms of analysis’
‘Appoint specific people who can extract the data and use it for advocacy and improving the health of people of Oman by improving the policies and by rectifying the current situation which needs correction in many areas’.

| 1.7.5. Need for a supporting Health Promotion information system, infrastructure and capacity | 1.7.5. Need for a supporting Health Promotion information system, infrastructure and capacity | ‘We need to develop a well-established Health Promotion information system to aid development of policies’.

| 1.7.6. Need for media involvement | 1.7.6. Need for media involvement | ‘We need to use the media’.
‘Still, we are lagging behind in using media like social media, which is very effective nowadays. Nobody has used it until now for health promotion unfortunately. The world is changing now. Even the people of the world are changing towards these types like Twitter, WhatsApp, snaps, YouTube. We do need some like new ways to tackle all these things’.

| 1.7.8. Need for Collaboration | 1.7.8.1. Need for collaboration with the statistics department to develop a five-year health development plan. | ‘Collaboration between the statistic department and the IT department is required to develop the five year health development plan and to involve specific indicators which help in developing the action plan of statistics and information for NCDs’.
‘Collaboration between the statistic department and the NCD department to design new forms that enable collecting
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<td>1.7.8.2. Need for specific indicators for non-communicable diseases.</td>
<td>‘To have appropriate tracking mechanisms or systems for the various risk factors, the consequences, whether they are injuries, diseases and ill health’.</td>
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<tr>
<td>1.7.8.3. Need to design new forms that enable data collection on NCD risk factors</td>
<td>‘Collaboration between the statistic department and the non-communicable diseases department to design new forms that enable collecting the data of NCD risk factors’. ‘Until now, we are using manual health registration in health institutions, which takes longer than using electronic systems’</td>
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**1.8. Health Promotion financing**

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<tbody>
<tr>
<td>1.8.1. Financing all programmes</td>
<td>‘Financing is always an issue in many programmes’. It’s not prioritised and allocated budget, which also makes the financing issue a bit of an awkward issue in this country’</td>
</tr>
<tr>
<td>1.8.2. Need for budget for specific programmes</td>
<td>1.8.2.1. MOH does not allocate a specific budget for specific programmes’</td>
</tr>
<tr>
<td>1.8.2.2. Budget is not broken down for specific activities</td>
<td>‘Budgeting does not happen. It is not broken down for surveillance for diseases’</td>
</tr>
<tr>
<td>1.8.2.3. Separate budget for prevention and control of NCDs required</td>
<td>‘But I mean that could be attributed to the fact that the ministry does not allocate a specific budget for specific programmes. It’s just like a big fund, and they tap into this fund as and when and if required. So there is no predetermined money for every activity or programme in the ministry, and that’s the way the ministry has been working’</td>
</tr>
<tr>
<td>1.8.3. There is a financial crisis</td>
<td>‘Problems with oil prices in the past few years are one of the main reasons why several programmes were hit hard unfortunately because they were not financed’</td>
</tr>
<tr>
<td>1.8.4. Prioritisation of interventions</td>
<td>‘There is no system of prioritisation and allocation of budget to the most needed'</td>
</tr>
<tr>
<td>1.8.5. Allocation of resources and resource generation</td>
<td>‘The MOH does not allocate a specific budget for specific programmes’. ‘I think there is a lack of earmarking for some of the specific activities for health promotion. For example, the government of Oman collects 100% tax on tobacco sold in the market. This tax increase will be hiked in 2018 to 200%. Yet we do not see any earmarking for any activities for health promotion’. ‘Also the other problem is that internationally, the World Bank does not support the concept of earmarking, for example earmarking budget for tobacco control. And that aggravates the problem’.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1.8.6. Monitoring and evaluation of budget</td>
<td>‘Develop an efficient, effective and sustainable management method of resources and fund’. ‘The MOH or the government has one budget and people just implement the budget’.</td>
</tr>
<tr>
<td>1.8.7. Understanding of Health Promotion results among decision-makers</td>
<td>‘Lack of understanding of health promotion will make decision-makers not give priority to health financing in this area, which causes gaps in health promotion capacity’.</td>
</tr>
<tr>
<td>1.8.8. Sustainable management of funds</td>
<td>1.8.8.1. Developing a new strategic plan</td>
</tr>
<tr>
<td>1.8.8.2. Need for the health council to specify a budget for Health Promotion and NCDs</td>
<td>‘Specify health promotion separate body like a health counsel, maybe to specify budget for health promotion and prevention to prevent NCD’.</td>
</tr>
</tbody>
</table>
Table 97 below presents the fourth thematic template for the second theme, including sub-themes, codes and sample quotations. Thus, it represents the full analysis of the interview data.

**Table 97. Theme two: codes and sample quotations**

<table>
<thead>
<tr>
<th>Second Theme</th>
<th>2. General perception about Health Promotion capacity map for NCDs in Oman</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.1. Agreement with findings</strong></td>
<td></td>
</tr>
<tr>
<td>2.1.1. Findings describe the situation of Health Promotion in Oman</td>
<td>‘The finding of the health promotion capacity map describes the situation of health promotion in Oman right now’.</td>
</tr>
<tr>
<td>2.1.2. Low Health Promotion capacity for NCDs in the regions and provinces</td>
<td>‘Agree that there is low health promotion capacity to prevent and control NCDs in the regions and provinces’ &lt;br&gt; ‘Causes of the Low health promotion capacity to prevent and control NCDs in the regions and wilayats because the major concern is the clinical part of NCD, rather than the promotive part, Because of concentration of services and improving those services at national level.’</td>
</tr>
<tr>
<td>2.1.3. Highlight important aspects to reach a conclusion about capacity-building for NCDs</td>
<td>‘It represents the health promotion capacity in Oman at present’ &lt;br&gt; ‘The major concern is the clinical part of NCD, rather than the promotive part to prevent NCDs’</td>
</tr>
<tr>
<td><strong>2.2. Quality of Health Promotion capacity-mapping for NCDs</strong></td>
<td></td>
</tr>
<tr>
<td>2.2.1. Originality</td>
<td>‘This health promotion map was made for the first time for Oman’. &lt;br&gt; ‘We have seen the health promotion capacity map theoretically in many other papers. But it is good to see it for the first time for Oman’. &lt;br&gt; ‘The health promotion capacity map really represents the actual situation in Oman when it comes into all relevant domains and elements of health promotion in the country with regard to the non-communicable diseases and prevention’.</td>
</tr>
<tr>
<td>2.2.2. Applicable to other health fields</td>
<td>‘The parameters of the Oman health promotion capacity map are applicable to so many fields in the health sector, and not only to NCDs’.</td>
</tr>
<tr>
<td>2.3. Challenges should be specified</td>
<td></td>
</tr>
<tr>
<td>2.3.1. Need to educate policymakers, Health Promotion workers and the public about Oman’s capacity for NCDs</td>
<td>‘The health promotion map will contribute to educating policymakers, health promotion workers and perhaps the general public about Oman’s capacity and where the challenges lie’.</td>
</tr>
<tr>
<td>2.3.2. Need to identify where work has begun in various areas of Health Promotion and where work is inconsistent</td>
<td>‘The health promotion capacity map is showing that some work has begun in some areas of health promotion in the country, and other areas where we’ve barely begun’.</td>
</tr>
<tr>
<td>2.3.3. Need to implement Health Promotion activities.</td>
<td>‘Health promotion programmes are lagging behind or not implemented’ ‘Health promotion is missed in Oman’ ‘There will be no good outcome without implementing health promotion’.</td>
</tr>
<tr>
<td>2.3.4. Need to evaluate Health Promotion activities.</td>
<td>‘No evaluation and follow up for health promotion activities’.</td>
</tr>
<tr>
<td>2.3.5. Need for programme delivery, information systems and Health Promotion financing.</td>
<td>‘Gaps exist in the existing health promotion capacity which is the highest in Health promotion programme delivery. There is no approved strategy because there is deficiency in the monitoring of health promotion programmes which cause gaps in health promotion capacity in Oman.</td>
</tr>
<tr>
<td>2.3.6. Challenge of clinical aspects of NCDs</td>
<td>‘The country was focusing on the curative part of the health care system and most efforts were focusing on curative care’. ‘Curative services are the priority that the country is trying to disseminate in all regions’.</td>
</tr>
<tr>
<td>2.3.7. Low awareness among Health Promotion workers regarding the skills of collaboration with non-health sectors</td>
<td>‘We have people working in health promotion activity but these people are not aware of the concept of health promotion and how to use health promotion capacity should it exist at the regional level or Wilayat level to improve the health of the people of Oman, and how to connect with other non-health sectors’.</td>
</tr>
<tr>
<td>2.3.8. Prioritising Health Promotion financing</td>
<td>‘There is a gap in health promotion financing’</td>
</tr>
<tr>
<td>2.3.9. Need to work on the five Health Promotion strategies of the Ottawa Charter, to improve the situation of NCDs</td>
<td>‘Work on the five health promotion strategies of Ottawa Charter, to improve the situation of NCDs’</td>
</tr>
</tbody>
</table>
| Ottawa Charter | Building healthy public policy  
Creating supportive environment  
Strengthening community action  
Developing personal skills  
Reorient the service’ |
|----------------|----------------------------------------------------------|
| 2.3.10. Need to develop infrastructure for Health Promotion within the MOH as well as in other key ministries | ‘Oman has no infrastructure for health promotion to prevent NCDs within the MOH as well as in some other key ministries’.  
‘There is no identifiable ‘health promotion unit/section/centre/department within the ministry or in the government’. |
| 2.3.11. Need to build local capacity | ‘Build local capacity in the field of health promotion for non-communicable diseases’. |
| 2.4. Causes of low Health Promotion capacity at regional and wilayat levels |  |
| 2.4.1. Strategic decentralisation of the interventions and services required | ‘Because of the in proper decentralisation system which is used now in Oman, the authority for regions and wilayats to improve their services were not given properly under strategic plans’.  
‘National level is usually a collection of all the efforts in capacity-building. With respect to wilayat or governorates, these capacities are less’. |
| 2.4.1.1. Centralisation of services and programmes for the national level gap in capacity at the regional and provincial levels | ‘Because of centralisation of the services and programmes’ |
| 2.4.1.2. Leaders neglect smaller cities and villages | ‘The capacity-building depends on the organisations sometimes as well, so these organisations are less in the wilayats. And if they are there, they are less active compared to the cities and the capitals in Muscat for example’.  
‘Leaders tend to neglect and forget about the smaller cities and villages’. |
<p>| 2.4.1.3. Experts from the interior regions migrate to major cities for better job opportunities. | ‘There is the migration of the experts from the interior regions to the major cities, where they have all the facilities and resources and better jobs are available’. |
| 2.4.1.4. Health Promotion capacity mostly pertains to the MOH | ‘The people at the central level at the MOH have higher capacity in terms of the qualifications and in terms of their clinical and administrative experience, and also in terms of contact with the international bodies and agencies, and they know the latest advanced strategies, policies and action’ |</p>
<table>
<thead>
<tr>
<th>2.4.2. Health Promotion department is required</th>
<th>plans in NCD control</th>
</tr>
</thead>
</table>
| 2.4.2.1. Lack of central Health Promotion department | ‘Oman has no infrastructure for health promotion within the MOH as well as in some other key ministries to push health promotion policies to improve health for the people of Oman’  
‘Lower health promotion capacity in regions and provinces because there is no department of health promotion at the central level’. |
| 2.4.3. Domination of curative services in regions | ‘The country mainly focuses on building health care facilities and training citizens to provide curative services. The focus on health promotion is not very big, but it is not a top priority’. |
| 2.4.4. Lack of understanding of Health Promotion. | ‘Lack of understanding of health promotion will make decision-makers not give priority to health financing in this area, which causes the gaps in health promotion capacity’. |
| 2.4.5. Wilayats are not a priority | ‘While in the regional level or wilayat level, as end users, they are more of service delivery and clinical users. They are more attached to the clinical part, which of course the capacity-building is one of it, but it is not a priority for them’. |
| 2.4.6. Lack of trained personnel | ‘Staff from different cultures in the regions and wilayats need more training on how to tackle NCDs, especially’. |
| 2.4.7. More focus on health education and not on Health Promotion. | ‘using health education strategy only is not effective enough to change behaviours or to improve NCD prevention and control’  
‘In Oman, there is health education section only, but there is no health promotion’. |

Table 98 below presents the fourth thematic template for the third theme, including sub-themes, codes and sample quotations. Thus, it represents the full analysis of the interview data.
<table>
<thead>
<tr>
<th>Third Theme</th>
<th>Recommendations to the government for improving the Health Promotion capacity in Oman</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.1 Plan of action is required</strong></td>
<td></td>
</tr>
<tr>
<td>3.1.1 Need for a plan of action for Health Promotion to be adopted by the council of ministers</td>
<td>‘There are no health promotion plans of action adopted by higher level authorities in the government’.</td>
</tr>
<tr>
<td>3.1.2 Need for allocation and generation of financial resources for the plan of action.</td>
<td>‘There is no allocation of financial resources to the plan of action for health promotion capacity to prevent NCDs’.</td>
</tr>
<tr>
<td><strong>3.2 A Health Promotion unit or department is required to improve the Health Promotion capacity</strong></td>
<td></td>
</tr>
<tr>
<td>3.2.1 Financial support to establish a Health Promotion department</td>
<td>‘There is a need for financial support to establish the health promotion department and for health promotion activities’.</td>
</tr>
<tr>
<td><strong>3.3 A multi-sectoral approach is required</strong></td>
<td></td>
</tr>
<tr>
<td>3.3.1 Involvement of other sectors in implementation of Health Promotion intervention required</td>
<td>‘Other sectors, though, can focus their resources and their capacity to do something. A government mandate to the other sectors to build their health promotion capacity to prevent NCDs’.</td>
</tr>
<tr>
<td>3.3.2 Collaboration required to avoid duplication and overlooking of potential target groups for</td>
<td>‘More collaboration between all organisations is needed to avoid duplication and not miss any activity or any target group of audience’.</td>
</tr>
<tr>
<td>3.3.3 Other sectors need to focus their resources and capacity for NCDs</td>
<td>‘Other sectors, however, can focus their resources and their capacity to do something’.</td>
</tr>
<tr>
<td><strong>3.4 Need for a ‘higher body’ (regulatory body)</strong></td>
<td></td>
</tr>
<tr>
<td>3.4.1 Need for a higher body to oversee the implementation of the plan of action</td>
<td>‘Higher bodies in the government follow the implementation of health promotion plan of action’.</td>
</tr>
<tr>
<td>3.4.2 Need to establish an independent authority for the prevention and control of non-communicable diseases</td>
<td>‘To formulate an independent authority to prevent and control non-communicable disease’.</td>
</tr>
<tr>
<td>3.4.3 The higher committee of non-communicable diseases should be represented by a higher level of authorities</td>
<td>‘The higher committee of non-communicable disease should be represented by a higher level of authorities’.</td>
</tr>
<tr>
<td>3.4.4 Policy and plan of action of Health Promotion for NCD have to come from a higher government entity</td>
<td>‘Policy and plan of action of health promotion for NCD has to come from higher government entities, either from the supreme council, from the ministerial council or even higher’.</td>
</tr>
<tr>
<td>3.4.5 High level government</td>
<td>‘High level of government commitment’.</td>
</tr>
</tbody>
</table>
| 3.4.6 Rules and regulations | ‘Rules and regulations. Each governmental sector has some rules and regulations applicable to prevent NCDs and to control this epidemic. Then, these rules are implemented’.

| 3.4.7 A legislative environment should be established | ‘Regulations and legislations have to be created. For example, food products, smoking, restaurants and cafeterias have to be regulated. So with regulations, the country will be able to succeed’.

| 3.5 Monitoring and evaluation frameworks | 3.5.1. Need for to establish a framework for monitoring and evaluation of Health Promotion | ‘Lack of monitoring and evaluation of health promotion to follow and evaluate the impact of health promotion capacity map domains according to the stage of development’.

| 3.6. Need to institutionalise Health Promotion | 3.6.1. Need to establish an institution for Public Health or Health Promotion | ‘To develop institutions for public health or for health promotion’.

| 3.6.2. All sectors should have a role | ‘Other related sectors should all work to promote health promotion capacity in the country’.

| 3.7 Health Promotion human resources required | 3.7.1 Need to focus on developing human resources | ‘There are no sufficiently qualified human resources with sufficient skills and knowledge in health promotion to deliver essential health promotion’.

| 3.8 Need for Health Promotion infrastructure. | 3.8.1 Establish an infrastructure for Health Promotion and render continuous support to it. | ‘Establish infrastructure of a department for health promotion and support it’.
‘Financial support for the established health promotion department’.

| 3.9 Need for community involvement | 3.9.1 Need to develop a strong and well-planned programme of community involvement and engagement | ‘Develop a strong and well-planned programme of community involvement and engagement’

| 3.10 Need for advocacy and communication | 3.10.1 More advocacy is required on a healthy lifestyle and healthy nutrition | ‘There is no advocacy for the concept of health promotion in Oman itself’
‘To advocate the concept of health promotion in Oman itself for the MOH or other key ministries and other government departments’.

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3.11. Need to strengthen and empower the MOH

3.11.1 Need to strengthen and empower the department of NCD of the MOH to bring all related departments working for the prevention and control of NCDs under one umbrella.

‘there should be a unit, section or department in other ministries related to NCDs, which has the role of controlling NCDs. It is not the responsibility of only the MOH. Other related sectors should all work to promote health promotion capacity in the country’

3.12. Need for collaboration within ministries, NGOs and private sector

3.12.1. Need for the development of Health Promotion capacity interventions for non-communicable diseases, which is everybody’s responsibility.

‘We should have cooperation because health is everybody’s concern, not just that of the MOH. Other partners think that health is a job of the minister of health, which is not true. It is the business of everybody: the community, NGOs, and other related sectors’.

4.2.4. Summary of the qualitative template analysis

4.2.4.1. Theme 1: Interviewees’ opinions regarding the Health Promotion capacity domains

A) Policies and plans: All interviewees agreed with the capacity maps developed. They pointed out that policies existed, but these were either not implemented, or only partially implemented, and that these policies and plans needed to be implemented.

B) All interviewees agreed that there was no leadership or expertise (i.e., core of expertise) in Health Promotion. Interviewees advised that a Department of Health Promotion with leadership experts needs to be established to implement Health Promotion interventions.

C) All interviewees expressed that Health Promotion needed specific ring-fenced financing and should not be paid for from the overall health budget.

4.2.4.2. Theme 2: General perceptions about Health Promotion capacity-mapping for NCDs in Oman

All interviewees agreed with the map results from the quantitative study. All interviewees reported that the eight domains in Catford’s (2005) framework for Health Promotion
mapping were applicable to the situation in Oman. All interviewees noted that this was the first time this type of mapping had been done. Seven interviewees believed that there was insufficient and ineffective evaluation of health services in Oman in general, including Health Promotion, and five interviewees suggested adding a domain called ‘evaluation’. Six of the interviewees suggested that the Health Promotion capacity map could be used for mapping other capacities in the health sector.

4.2.4.3. Theme 3: Recommendations to the government for improving Health Promotion capacity

According to eight interviewees, there should be a plan of action for Health Promotion in Oman overseen by the highest body of the government (i.e., the Council of Ministers). All interviewees said that a multi-sectoral approach was needed to achieve more effective Health Promotion interventions to prevent NCDs. Seven interviewees suggested continuous external or internal evaluation of Health Promotion services for NCDs.

4.2.5. Objective 3: Recommendations for strengthening the existing government support

This objective was achieved in the qualitative study where suggestions were collected from key policymakers who have the power to implement Health Promotion policies and strategies of the Government of Oman to improve Health Promotion capacity to control and prevent NCDs.
4.2.5.1. Findings relevant to objective 3

Table 99 provides the suggestions to the government from interviewees, with corresponding mean stage of development from the quantitative (phase two) results.

**Table 99. Suggestions categorised by most relevant domain(s)**

<table>
<thead>
<tr>
<th>Suggestions made by interviewees</th>
<th>Relevant Domain(s) and grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopt a plan of action by the Council of Ministers</td>
<td>Policy and plans 1(C)</td>
</tr>
<tr>
<td>Allocate financial resources to specific parts of the plan of action</td>
<td>Financing 8(D)</td>
</tr>
<tr>
<td>Involve other sectors in implementation</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>Create a higher body to oversee the implementation of the plan of action</td>
<td>Policy and plans 1(C)</td>
</tr>
<tr>
<td>Develop a framework for monitoring and evaluation</td>
<td>Information systems 7(D)</td>
</tr>
<tr>
<td>Establish an independent authority to prevent and control NCDs</td>
<td>Policy and plans 1(C), Core of expertise 2(B), Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>Prevention and control of NCDs should be represented by a higher authority</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>A higher committee for NCDs should include a higher level of authorities</td>
<td>Policy and plans 1(C), Core of expertise 2(B), Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>More collaboration is needed between all the organisations</td>
<td>Core of expertise 2(B), Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>Focus on developing human resources</td>
<td>Professional development 6(C)</td>
</tr>
<tr>
<td>Establish infrastructure/department for Health Promotion</td>
<td>Core of expertise 2(B)</td>
</tr>
<tr>
<td>Financial support required to establish a Health Promotion department</td>
<td>Financing 8(D)</td>
</tr>
<tr>
<td>Policies and plans of action have to come from a higher government entity: the supreme council, ministerial council or even higher</td>
<td>Policy and plans 1(C)</td>
</tr>
<tr>
<td>Other sectors should be involved and focus their resources and their capacity on relevant activities</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>A government mandate the other sectors to build their Health Promotion capacity to prevent NCDs</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>Have a high level of government commitment</td>
<td>Policy and plans 1(C), Core of expertise 2(B), Collaboration 3(C), Partnership 5(C), Professional development 6(C), Information systems 7(D), Financing 8(D)</td>
</tr>
</tbody>
</table>
4.2.5.2. Number of suggestions by Domain

The number of suggestions, by domain, in relation to government, is set out in Table 100 below.

*Table 100. Number of suggestions by domain*

<table>
<thead>
<tr>
<th>Domains</th>
<th>Number of suggestions</th>
<th>Relationship to government</th>
<th>Assessed domain grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative mechanisms</td>
<td>8</td>
<td>Inside government</td>
<td>C</td>
</tr>
<tr>
<td>Partnership</td>
<td>8</td>
<td>Outside government</td>
<td>C</td>
</tr>
<tr>
<td>Policies and plans</td>
<td>6</td>
<td>Inside government</td>
<td>C</td>
</tr>
<tr>
<td>Core of expertise</td>
<td>6</td>
<td>Inside government</td>
<td>B</td>
</tr>
<tr>
<td>Financing</td>
<td>3</td>
<td>Both inside and outside</td>
<td>D</td>
</tr>
<tr>
<td>Professional development</td>
<td>2</td>
<td>Outside government</td>
<td>C</td>
</tr>
<tr>
<td>Information systems</td>
<td>2</td>
<td>Outside government</td>
<td>D</td>
</tr>
<tr>
<td>Programme delivery</td>
<td>1</td>
<td>Both inside and outside</td>
<td>D</td>
</tr>
</tbody>
</table>

As seen in Table 100, the domains with the highest number of suggestions were Collaboration (n=8) and Partnerships (n=8). The domains with the second highest number of suggestions were Policies and plans pertaining to Health Promotion and Core of expertise in Health Promotion. The remaining domains had less than four suggestions each. In general, the domains with lower stage of development grades were subject to fewer suggestions.

The number of interviewees’ suggestions were higher for the domains of action that were within the government, if one follows Catford’s (2005) example of dividing the wheel into four quadrants according to the two continuums of inside/outside government and policy/partnership focus.

The number of suggestions was lower for the domains where the Health Promotion action was ‘outside’ the government (12 suggestions in total) compared to where it is ‘within’ (20 suggestions in total). The outside government domains were Health Promotion Partnership (8 suggestions), Health Promotion Professional Development (2 suggestions) and Information systems (2 suggestions).
An exception to the ‘many responses for within government Domain’ pattern is that there were a lot of suggestions for partnerships between sectors to deliver joint activities that promote health by preventing and controlling NCDs. This includes partnerships between NGOs, the private sector, civil society and government. There were relatively few suggestions (four in total) for domains where action was required both inside and outside the government (i.e., with respect to Programme delivery and Health Promotion financing).

The suggestions for programme delivery were as follows: ‘It was suggested to increase the commitment from the high level of government to improve programme delivery’. The next low scoring domain - Information systems - received the following suggestion: ‘To establish a framework for monitoring and evaluation and to increase commitment from a high level of government’, followed by the suggestions for Health Promotion financing: ‘To allocate financial resources to the NCD plan of action, to provide financial support for the established Health Promotion department, to provide a high level of government commitment’.

Interviewees gave a high number of suggestions relevant to Domain 2 Core of expertise, which were: i) to establish an independent authority for the prevention and control of NCDs, ii) to establish an institution for public health or for Health Promotion, iii) the higher committee of NCDs should be represented by higher-level authorities, iv) more collaboration is needed between all related organisations to avoid duplication and ensure that any activity or any target group or audience are not missed out, v) establish infrastructure for the Department for Health Promotion and support it, and vi) a high level of government commitment is required. This indicates that Oman has a need to establish a unit/section/centre/department for ‘Health Promotion for NCDs prevention’ within the national MOH.
4.2.5.3. Domains with the highest number of suggestions

This sub-section explores in more detail those domains that received six or more suggestions from the phase three interviewees. Table 101 presents these suggestions, categorised by the Domain(s) they were most related to.

**Table 101. Suggestions categorised by most relevant Domain(s)**

<table>
<thead>
<tr>
<th>Domain(s) (grade)</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Plans domain 1(C)</td>
<td>Adopt a plan of action by the council of ministers</td>
</tr>
<tr>
<td>Policy and Plans domain 1(C)</td>
<td>A higher body to oversee the implementation of the plan of action</td>
</tr>
<tr>
<td>Policy and Plans domain 1(C) Core of expertise domain 2(B) Collaboration domain 3(C) Partnership domain 5(C)</td>
<td>Establish an independent authority to prevent and control NCDs</td>
</tr>
<tr>
<td>Policy and Plans domain 1(C) Core of expertise domain 2(B) Collaboration domain 3(C) Partnership domain 5(C)</td>
<td>Higher committee for NCDs should be represented by a higher level of authorities</td>
</tr>
<tr>
<td>Collaboration domain 1 (C)</td>
<td>Policies and plans of action have to come from a higher government entity: the supreme council, ministerial council or even higher</td>
</tr>
<tr>
<td>Policy and Plans domain 1(C) Core of expertise domain 2(B) Collaboration domain 3(C) Programme delivery 4(D) Partnership domain 5(C) Professional development 6(C) Information systems 7(D) Financing 8(D)</td>
<td>High level of Government commitment</td>
</tr>
</tbody>
</table>

As can be seen in Table 101 above, a number of suggestions recommend that the policies and plans for Health Promotion for NCD prevention should be governed and overseen by a higher government entity. One key policymaker suggested that NCD management and the task of building Health Promotion capacity to prevent NCDs goes beyond the remit and abilities of the health sectors. At the time of the interviews, there was no higher entity for Health Promotion for the prevention of NCDs. Although an NCD committee was established in 2015, there is still no separate NCD-related institution at the higher level of government.
Another domain that attracted numerous suggestions was Domain 3 Collaboration. The same suggestions that were given for Domain 3 were also given for Domain 5 (partnerships) because participants considered collaboration to be the same as partnership. In Table 102 below the suggestions are categorised according to the domain they related to.

**Table 102. Suggestions categorised by most relevant Domain(s)**

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>Most relevant Domain(s) (grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To involve other sectors in implementation</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>2. To establish an independent authority to prevent and control NCDs. Additionally, there should be an even higher committee for the prevention and control of NCDs, higher than the existing level of authorities</td>
<td>Policy and plans 1(C)+ Core of expertise + Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>3. More collaboration is needed between all the organisations to avoid duplication and omission of activities or audience groups</td>
<td>Policy and plans 1(C)+ Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>4. Other sectors should be involved and should focus their resources and capacity on relevant activities</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>5. A government mandate to the other sectors to build their Health Promotion capacity to prevent NCDs</td>
<td>Collaboration 3(C), Partnership 5(C)</td>
</tr>
<tr>
<td>6. To have a high level of government commitment</td>
<td>Policy and plans 1(C), Core of expertise 2(B), Collaboration 3(C), Partnership 5(C), Professional development 6(C), Information systems 7(D), Financing 8(D)</td>
</tr>
</tbody>
</table>

Note: Sometimes, interviewees did not clarify what they meant by other sectors or organisations, so the researcher decided that other sectors or organisations meant government, NGOs and the private sector because all of the interviewees talked about sectors and organisation inside and outside of government. One overall pattern in the six suggestions of the key policymakers was that there should be government-mandated or obligatory partnerships between sectors.

### 4.2.5.4. Enhancement relationship between the eight domains

Analysis of the interviewees’ recommendations to the government revealed a perceived enabling relationship between the domains for achieving effective Health Promotion capacity in Oman. Specifically, eight interviewees suggested that if there was a good
collaboration (Domain 3) and partnership (Domain 5) between the multiple sectors that are involved in Health Promotion capacity for the prevention of NCDs, it will be easier to develop a multi-sectoral policy plan of action (Domain 1), and this plan will drive the building of the core expertise forward, i.e. Health Promotion leadership and infrastructure (Domain 2). For example, interviewee 3 suggested that collaboration will lead to:

‘A very strong and well-planned programme of community involvement and engagement. A very strong collaboration and involvement of other government stakeholders, for example, the Ministry of Social Affairs, Ministry of Sports, Ministry of Municipality, and many other government and non-government organisations. Because without their involvement, the MOH will not be able to really run a very successful programme. The involvement of the Ministry of Industry and Commerce is also required. Like when it comes into food products, smoking, restaurants and cafeterias and these sort of … you know, it has to be regulated and a legislation has to be created’.

Interviewee 4 suggested that a plan will lead to building of a core of expertise:

‘…there is no department for Health Promotion, and most of the activities are given to the Department of Health Education. Therefore, Oman will need to establish a Department of Health Promotion and support that department. Infrastructure is non-existing. In addition, we have to have financial support for this department, because you cannot have a department and then, you know, the department becomes idle because of a lack of financial resources. Therefore, these are ‘must’s–infrastructure and financial support’.

The interviewees believed that once the core of expertise and infrastructure for Health Promotion was in place, this would drive other domains towards improvement, especially the low scoring domains (programme delivery, information systems and Health Promotion financing). These relationships identified by the key policymakers in the qualitative study are summarised and illustrated in Figure 11 below.
Figure 11. Enhancement diagram of the Health Promotion capacity for NCD prevention

In essence, the interviewees’ recommendations showed that if the Omani government improves the Health Promotion partnerships and collaboration, this was will improve the Health Promotion policies and plans and Health Promotion core of expertise, which will in turn improve the Health Promotion programme delivery, the Health Promotion professional development, the Health Promotion information systems and the Health Promotion financing. Overall, Health Promotion interventions for the prevention of NCDs should expand beyond the MOH to other sectors that are involved in Health Promotion and the prevention of NCDs.

4.3. Conclusion
The results of the quantitative second phase study revealed that the overall average grade of the Health Promotion capacity in Oman was C; mean = 3.75, Range 2.75–4.57, which means ‘Actioned’; that work has started but that was too early to assess impact or outputs at the national level and there has been no evaluation and monitoring evidence till date (Catford, 2005). The assessment of the capacity stage of development of the eight domains revealed one low B grade ‘Partially implemented’ in the Core of Expertise capacity Domain, and a C grade ‘Actioned’ in four Domains (policies and plans, ...
collaboration, partnership and professional development). The Programme Delivery, Information Systems and Health Promotion Financing Domains received a D Grade, ‘Under development’. This means that there had been a commitment on the national level to implement the activity, and that work was under way to develop it. The lowest scoring Domain was programme delivery.

Further analysis of the suggestions of the interviewees reveals the link between the eight health promotion domains for NCDs prevention in Oman. This link shows the enhanced relationship between Domain ‘Collaboration’ and Domain ‘Partnerships’ and other domains; in other words, if collaboration and partnership improve the remaining domains will also improve. These are therefore considered as enabler requirements to improve the capacity of health promotion for the prevention of NCDs in Oman.

In conclusion, the qualitative phase three study revealed three themes from the template thematic analysis of the interviews, which were as follows: i) Domains of the Health Promotion capacity for the prevention of NCDs in Oman, ii) general perceptions about Health Promotion capacity-mapping for NCDs in Oman and iii) recommendations to the government for improving the Health Promotion capacity in Oman.
5. Discussion

This chapter provides a summary and commentary on the key results, integrating the quantitative and qualitative results in line with the objectives of the mixed-methods approach adopted, and critically discussing the findings in the context of the existing literature. It assesses the strengths and limitations of the measurement tool and the study as a whole, and highlights the innovative steps undertaken in this mapping of the Health Promotion capacity interventions for NCD prevention in Oman. The implications of the results for Health Promotion capacity-mapping and related research activities are discussed, and recommendations are provided for the Omani Government, the MOH, other sectors and for future research.

5.1. Research Question and Objectives of the Research

The overall research question for this research was ‘What is the Health Promotion capacity for preventing NCDs in Oman?’

The three objectives were:

I. To examine the level of Health Promotion knowledge, skills, commitment, systems, structures and leadership that exist in Oman to determine those interventions that promote health, including policies and organisational and community-level strategies, and those that are integrated into the existing structures for preventing NCDs in Oman.

II. To determine gaps where further Health Promotion capacity is required to prevent and control NCDs in Oman.

III. To identify recommendations for strengthening existing government support for Health Promotion capacity directed at preventing and controlling NCDs.
5.2. Comparison of Findings to Other Studies on Health Promotion Capacity Mapping

Capacity mapping is usually performed to provide a baseline measure or in some cases a benchmark against which improvements in capacity can be planned, which is how it has been used by WHO and other agencies. Few studies have been conducted worldwide to assess NCD-related capacities (WHO, 2001, Joffres et al., 2004; WHO, 2010b, 2018a, 2014a), while other studies have been conducted to assess Health Promotion capacities (WHO, 2005, 2010a; Nam & Engelhardt, 2007). There has, however, been no Health Promotion capacity-mapping project specifically focused on NCDs for any country (McQueen, 2013; Marmot and Bell, 2019) and even though Aluttis et al.’s (2014) proposed a framework and instrument as a theoretical guide for academic researchers and institutions to set up their own public health capacity assessment. As only little work on health promotion capacity for NCDs prevention has yet taken place, this study adds value to the discourse of building health promotion capacity for NCDs prevention and control on the three level of national, regional and local levels of any country.

The WHO-EMRO (2010) report showed the overall score of the capacity for Oman in 2010 was D. In both WHO (2005) for WPR countries, and Nam & Engelhardt (2007) for South Korea, the score was B. This current study found that the average grade for Oman was C which is also lower than that reported by both WHO (2005) study for WPR countries and that of South Korea (Nam & Engelhardt, 2007).

This mapping exercise for Oman in 2017 revealed that the average stage of development across the eight domains was C (range, D to B). The three lowest scoring domains (graded D), including programme delivery, information systems, and financing, were identified as gaps. These results indicate that HP actions for NCDs have not been implemented for most domains in Oman. Compared with other studies, the mean overall score across domains for 17 Western Pacific Countries (WPR) studied in 2005 (WHO, 2005) was 4.24, indicating that Oman (3.75) was less developed in 2017 compared to these countries in 2005. On the other hand, four of the eight domains showed improvements compared
with Omani data included in the HP capacity map produced by WHO-EMRO in 2010. This suggests that Oman may have initiated strategic interventions in HP for NCDs between 2010 and 2017.

The WHO-EMRO (2010) report revealed that health promotion interventions for NCDs and other health promotion problems were not well developed in the EMRO Region as compared to the report of WHO-WP (2005) where all countries were assessed as having partially implemented of all the investigated health promotion interventions. Comparing the Omani results from WHO-EMRO (2010) with the current study demonstrates an improvement from D to C in the Health Promotion capacity between the periods 2010 to 2017. WHO-EMRO (2010) reported that the lowest grades (gaps) were in domains of ‘Programme Delivery’ and ‘Partnership’; both scored E which means that the activity is being considered for implementation, but no firm commitment has yet been given. In comparison the current study found that the lowest grades were on the domains of ‘Programme Delivery’, ‘Information Systems’ and ‘Health Promotion Financing’; all of which scored a D, which means that there has been a commitment on the national level to implement the activity, and that work is under way to develop it. These differences may indicate development of Health Promotion in Oman, but the original WHO-EMRO (2010) data may not be as reliable as the current study because they only used a single country informant.

WHO-EMRO (2010) noted that health promotion is essentially a set of programmes that may differ from country to country depending on the country’s level of development and most important health issues. Health promotion is rarely an integrated policy of the government as well as in Oman and this remains the situation. The WHO-EMRO report revealed that in the EMRO Region, including Oman, there is weaker stewardship functioning by the ministries of health, which led to health promotion interventions to be anchored within the activities of the ministry of health, and only rarely in other relevant ministries such as education, environment, interior, public works. This has resulted in
health promotion programmes being rarely transcribed into legislation, even the exception for tobacco control remains weak in Oman.

According to the WHO-EMRO (2010) report Health promotion programmes in the countries included, including Oman, are often delivered or coordinated within settings such as schools (school health), basic development needs and healthy communities (villages, cities, schools, nations). This remains the case in Oman. Therefore, Health Promotion activities have no constituency of their own in Oman.

WHO-EMRO (2010) reported that some health promotion programmes appear to be active in all the countries (i.e., tobacco cessation, control of non-communicable diseases, including cardiac illnesses, hypertension, diabetes and cancer). However, it is clear that Oman needs to improve in NCD prevention programming, activities and interventions according to both 2010 and 2017 findings.

The current findings are less comparable with those of Nam & Engelhardt (2007), given that their work focused on South Korea. Using both HP-Source and the Health Promotion Capacity Profile, Nam & Englehardt (2007) documented that health promotion capacity in Korea is well-developed, and the resulting ‘map’ of health promotion capacity is quite impressive for a country that has embarked on health promotion only 10 years ago (Nam & Engelhardt, 2007).

5.3. Integrated Findings across Domains
This study aimed to examine capacity directed towards Health Promotion for preventing Non-Communicable Diseases in Oman. This aim was achieved through a mapping of health promotion interventions for NCDs in phase 2 and from the recommendations that were given in phase 3 which explaining what further Health Promotion capacity is required to prevent and control NCDs in Oman.

The integration of the findings from phases 2 and 3 were discussed for each domain in which the quantitative findings was explained, compared and integrated with the qualitative feedback and recommendations of the interviewees in phase 3 study. A quote
was attached to most of the findings as evidence example. The integration began with discussing the study findings in the context of the existing literature, a comparison between WHO-EMRO (2010) and the current study was provided. Finally, the findings were linked with other elements of the theoretical and empirical literature for each domain.

All the domains were subdivided into sub-domains depends on the integration findings from both the quantitative and the qualitative studies. For example, domain one Policies and plans subdivided into Sub-domains: NCDs, risk Factors, socioeconomic factors and these sub-domains were further subdivided into actions and interventions (e.g., sub-domain 1 NCDs was further sub-divided into leadership, partnerships, health Promotion orientation and timelines).

The thematic integration of the results of both phase 2 and phase 3 discussed in this chapter revealed that the result of phase 2 was consistent with the result of phase 3 among all the health promotion capacity domains, except domain 2 in which the result revealed that in contrast to the quantitative results, most of the interviewees (n = 8) in the qualitative phase stated that a core of expertise in Health Promotion is required for prevention of NCDs and that there is currently no Health Promotion unit/section/centre/department to control and prevent NCDs in Oman. One interviewee said, ‘There is no identifiable “Health Promotion” unit /section /centre /department within the Ministry, or in the government’ (see Table 96, 1.2.2.1). While others reported, ‘There is no core of expertise and leadership within the national MOH for health promotion development, coordination and partnerships’ (see Table 96, 1.2.1), and ‘Oman has no infrastructure for health promotion within the MOH as well as in some other key ministries to push health promotion policies to improve health for the people of Oman’ (see Table 97, 2.4.2.1). This specificity is likely to be because these interviewees are public health specialists and most of them work MOH and are aware of the infrastructure of the MOH.
This section presents the findings from both studies, the second quantitative phase and the third qualitative phase for Domains 1 to 8 in turn.

5.3.1. Integrated results for Domain 1: Policies and plans

The overall mean for this domain’s stage of development was C (‘actioned’). The range of grades in domain one is narrow, ranging between B and D. The overall grade, C, was not as high as that of WHO-EMRO (2010) grade B (which means ‘partially implemented’). That grade, however, seems high, given that, three years later, WHO (2013a, p.141) found that there was no ‘operational multi-sectoral national policy, strategy or action plan that integrates several NCDs and shared risk factors’ in Oman. The following sections discuss the results of the three sub-domains (NCDs, Risk Factors and Socioeconomic Determinants) of Domain 1.

5.3.1.1. Sub-domain 1: NCDs

The stage of development of policies, plans and programmes for NCDs is higher for diabetes (B) than that for other NCDs (all C). In spite of a good quantitative grade for diabetes, however, the interview data suggested that more care is required for diabetic patients. For example, one interviewee said: ‘Care of people with diabetes, with other NCDs is very much lagging behind’ (see Table 96, 1.4.5.4). This interviewee might have said this because diabetes has continued to increase in Oman, by almost 50% since 1991 (from 8.3% to 14.5% in 2017) (MOH, 2017).

An alternative explanation may be that policies, plans and programmes for diabetes in Oman have been limited to the level of clinical treatment and health education. The management of diabetes in Oman is consistent with the European NCD Plan of Action 2016-2025 (WHO, 2016c), which involves effective glycaemic control for people with diabetes. Some examples of programmes that are at the clinical treatment level and not yet at the level of community are the development of a manual registry for diabetes in PHC, which was introduced in 2002 (MOH, 2014); provision of dietetic clinics and health education clinics in each health centre and hospital in 2005 (MOH, 2006) and podiatric clinics established in every hospital for diabetic foot care in Oman in 2010 (MOH, 2006).
Unlike in Europe, however, Oman has few interventions aimed at changes in lifestyle and determinants of health that might help to prevent type II diabetes (e.g., universal education and health; clean water and safe environment; and employment) (MOH, 2015). Health education interventions for diabetes are conducted in settings such as schools, workplaces and, especially, in PHC. These programmes are primarily conducted to raise awareness about diabetes, and even though these programmes were evaluated to be of a good level in raising awareness among diabetic patients, health promotion interventions in the policy, planning and determinants of health for diabetic patients and for the Omani nation are still lagging behind (MOH, 2006-2015).

Policies, plans and programmes for other NCDs scored only C. This is consistent with the interventions which have been undertaken in Oman. The fourth five-year plan for Health Development (MOH, 1996) introduced actions intended to address a number of NCDs, and these have been included in subsequent five-year plans (see Table 6), but almost all of these initiatives have been at the clinical level.

Although Oman does have Health Promotion interventions to prevent CVD, cancer, diabetes or chronic respiratory diseases, therefore, these interventions have been primarily at the level of Health Education rather than Health Promotion.

5.3.1.1.1. Leadership

Interviewees suggested that to improve policies and plans for the prevention of NCDs, Health Promotion policies and plans must come from a higher level of government (e.g., the Supreme Council or the Ministerial Council). One interviewee said, ‘There are no Health Promotion plans of action adopted by higher level authorities in the government’ (Table 98, 3.1.1). This is consistent with the view of the IUHPE (2018, p. 8),

‘Health Promotion is centrally important in the primary prevention of NCDs and successful engagement across sectors can maximise health gain, improve equity and contribute to the achievement of many of the SDGs. Given this, it is necessary that health promotion and NCD prevention is represented at the highest level of government’.

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The need to ensure that NCD prevention is led from a high level of the Government has also been agreed upon as a necessary high-level commitment in many WHO and UN General Assembly meetings, such as the political declarations in 2011 and 2013, and particularly from the Presidents’ and Prime Ministers’ meetings in 2018, which aimed to ‘strengthen their commitment, as Heads of State and Government, to provide multi-sectoral strategic action for the prevention and treatment of NCDs,’ (WHO, 2018, p.7).

In Oman, the Undersecretary of Planning in the MOH, who is considered to be at a higher level in the Government, led the development of the ‘Mandate of the National Multi-sectoral committee for the prevention and control of NCDs’ which involved developing a policy and plan of action in 2015. The subsequent National Policy for the prevention and control of NCDs and their risk factors was approved and legislated in 2016 (MOH, 2016). Interviewees, however, reported that the required actions for NCD prevention should also be led from a higher body (e.g., the Supreme Council of planning, the Ministerial Council) of the Government, since this higher body could provide the impetus and sense of national urgency necessary to translate the concept of ‘health in all policies’ (WHO, 2013) into action. Unfortunately, neither the interventions arising from the mandate nor the legislation of the National Policy for the prevention and control of NCDs and their risk factors have been evaluated yet. The only evidence that Oman has not yet successfully implemented these interventions is the growing incidence of NCDs in young Omani people.

5.3.1.1.2. Partnership

Health in all policies is a strategy that aims to include health considerations in policymaking across different sectors that influence health, such as transportation, agriculture, land use, housing, public safety and education (WHO, 2013). ‘Health in all policies’ promotes partnerships to improve the determinants of health (the causes of the causes of NCDs), and this in turn works to prevent or reduce NCDs. In Oman, authorisation for multi-sectoral action was legislated for in 2015 when the National Policy
for the prevention and control of NCDs and their risk factors was mandated (MOH, 2016). Interviewees pointed out, however, that there was no delegation of responsibilities for NCDs to the multiple stakeholders involved, and that this was necessary to operationalise the concept of ‘Health in all Policies’.

5.3.1.1.3. Health Promotion orientation

Theoretically, Health Promotion Policy is one of the capacity-building blocks within all Health Promotion and NCD frameworks (e.g., Catford, 2005; Mittelmark et al., 2006; Aluttis et al., 2014; LaFond et al., 2002; NSW Health Department, 2001; and NCDs frameworks from the WHO, 2001; 2010b; 2013). A number of these frameworks apply the Ottawa Charter for Health Promotion principles to construct multi-level and multi-strategy preventive and Health Promotion actions to address such issues. Although Oman has a Health Promotion policy for the prevention of NCDs, as well as a policy mandate for multi-sectoral action (MOH, 2015, 2016), the Ottawa Charter for Health Promotion (WHO, 1986) is not mentioned in these policies and Oman has no standalone Health Promotion policy. Interviewees suggested that if partnerships and collaboration improved, the rest of the Health Promotion capacity for NCD prevention in Oman would also improve because collaboration and partnerships will help in developing Health Promotion policies, which in turn will translate health in all policies into action. As one interviewee said (see Table 96, 1.1.1.3) ‘Collaboration and partnership are important to develop standalone Health Promotion policy in order to translate the concept of health in all policies into action’. Another interviewee said (see Table 96, 1.1.5.3). ‘There is no delegation of roles and responsibilities among multi-sectors that work on Health Promotion and NCDs’.

5.3.1.1.4. Timelines

According to the interviewees, another challenge is the delay in the implementation of policies and plans noting that ‘It takes a long time to finalise plans and policies in Oman, and policies and plans are often not implemented or they are only partially implemented’ (see Table 96, 1.1.5.3). Oman therefore needs to ensure that all the policies and plans have within them a timeframe for their rapid implementation, supported by a Health
Promotion policy team or advisory group (Nam & Engelhardt, 2007; IUHPE, 2018), to drive Health Promotion policies and plans to full implementation.

5.3.1.2. Sub-domain 2: Risk factors

Policies related to ‘tobacco and alcohol consumption’ (Grade B) (see Figure 5 in results chapter) were ranked more highly than those related to ‘Fatty, sugary and salty food’ (Grade D), which was the lowest grade, or policy related to ‘physical activity’ (Grade C).

5.3.1.2.1. Tobacco

Although policy on tobacco was ranked relatively highly, interviewees did not always agree (see Table 96, 1.4.5.1) ‘Tobacco control for example is very much lagging behind’. This contradiction may be because Oman has problems with implementing policies and plans which prevent tobacco use due to lack of money and expertise (MOH, 2007, 2011, 2014, 2015). Oman has had a five-year health development plan that includes a plan and policies for both tobacco and alcohol use since 2006. Interventions in Oman to prevent tobacco use have included: introduction of tobacco control (2005), legislation banning smoking in public places in 2007, guideline assessment for common risk factors such as tobacco use, introduction of the global youth tobacco survey (2010), establishment of Anti-Tobacco National Committee in 2010, increase in taxes on tobacco in 2010 and introduction of cigarette health warning and labelling specifications in 2012. A law has also been released through the Ministry of media with regards to tobacco advertising (Al-Lawati et al., 2017).

Nevertheless, Oman is still lagging behind in tobacco policies, legislation and implementation (Al-Lawati et al., 2017). Although Oman participated in the WHO FCTC in 2005, taxes on tobacco are not effectively implemented in Oman (Al-Lawati et al., 2017). Oman therefore needs to accelerate action in adopting the highest attainable policies recommended by the WHO MPOWER package. According to Al-Lawati et al. (2017), further legislative work is also required to restrict sponsorship activities by the tobacco industry.
5.3.1.2.2. Alcohol

The quantitative results ranked alcohol policies relatively highly (B). Oman has low alcohol prevalence (prevalence in 2010: 1.2%) (DGP&S, 2012) because Oman is a country in which alcohol use has traditionally not been accepted for religious and cultural reasons (DGP&S, 2008). The high grade for policy on alcohol could also be because the eighth five-year National Health Plan 2010-2015 (DGP&S, 2012) included a health programme regarding mental health that involved reducing the incidence of substance dependence and its harmful consequences, which includes alcohol.

5.3.1.2.3. Nutrition

The lowest grade in this domain was for nutrition policy to reduce fatty, sugary and salty food, which received a Grade D. This is consistent with the qualitative results. As one participant stated (see Table 96, 1.4.5.2),

‘There is no basic understanding of what is happening in the country regarding diet, physical activity and tobacco use. Do not know what is happening in the country regarding nutrition. We do not know what is happening in nutrition in Oman, despite having four surveys in 1991, 2000, 2009 and 2017’.

Nutrition policies and plans in Oman were introduced into the five-year health development plans in 2000. Interventions to improve nutrition in Oman include a national strategy on diet, physical activity and health in 2010, provision of appropriate messages on healthy diet, including the healthy food plate in 2010, and the introduction in 2017 of interventions seeking to encourage consumption of health foods in preference to unhealthy ones (salt, sugar, palm oil). The recent nutrition strategy, ‘Combating the epidemic of Non-Communicable Diseases in Oman by changing the nutritional quality of the food chain’, issued by the Directorate General of Planning & Studies (DGP&S, 2015) included the following urgent needs:

I. To reduce salt intake in the national diet by focusing initially on highly salted common foods (e.g., bread, cheese, canned foods, processed meats and
pickles/spices) through a coordinated approach with cheese manufacturers, processed meat producers and import businesses. To develop government guidelines to procure only food items complying with the new salt standards, as well as new fat criteria as in trans and saturated fat changes and by identifying national groups for monitoring.

II. To develop regulatory measures for eliminating trans-fat, by forbidding the production of trans-fat by the food oil refining industries in the country, requiring food importers to have all imported foods certified as industrial trans-fat free and to involve the Ministry of Commerce.

III. To focus on reducing saturated fat in Oman, by reducing fat in milk and milk products, which required government-supported establishments to only provide semi-skimmed (1.0-1.8% fat) milk and to make this milk available for sale to consumers at a lower price than full cream milk. In addition, collaboration with the Ministry of Agriculture and Fisheries to help local dairy businesses to develop milk-skimming facilities.

IV. In 2020, an 100% taxation on sugar sweetened beverages had been introduced

5.3.1.2.4. Physical activity

The mean grade for ‘Physical activity’ was Grade C. The National Policy for the Prevention and Control of NCDs (MOH, 2016) required that the Department of Community Initiatives in the MOH evaluate a range of indicators, including physical activity. The MOH then wrote an annual report submitted to the WHO. In practice, however, strategic actions to improve physical activities in Oman have not been implemented because of the lack of money and expertise mentioned in Oman Vision and Synopsis of strategic studies (MOH, 2014; 2015). A strategy was proposed (Mabry, 2014), but no action has yet been taken. This lack of funding and expertise is also reflected in the data from the interviewees, who suggested that the MOH should allocate a specific budget for implementing targeted policies and plans for NCDs and associated risk factors.
5.3.1.2.5. Legislation and regulation
Legislation and regulation should be developed to improve health by controlling access to unhealthy products (e.g., tobacco, alcohol, drugs, high sugar beverages, fatty food). Oman has implemented some such legislation (MOH, 2012, 2015; Nutrition strategy, 2015, Oman five-year health development plans of action from 2006-2020). The WHO has been exploring the use of legislation to help prevent obesity through changing environments (WHO, 2003, 2004, 2005, 2013, 2018). In 2003, the WHA endorsed the FCTC; and in 2004, WHA endorsed the WHO Global Strategy on Diet, Physical Activity Health (DPAS) (WHO, 2005). Oman is still lagging in the implementation of all these, and despite the country having participated in and signed all the above conventions and strategies, scholars continue to identify the need for urgent action to implement the Convention and MPOWER policies and DPAS strategy (Al-Lawati et al., 2017; Mabry et al., 2014).

5.3.1.2.6. Policy measures
The European Action Plan for NCD Prevention 2016-2025 recommended that a policy team should address NCDs and associated risk factors (e.g., healthy dietary habits) by means of economic and marketing measures targeting tobacco, food and alcohol; by reformulating and enhancing food products (specifically targeting salt, sugars and fats); by encouraging active living and mobility; and by ensuring that there is clean air in the environment (WHO, 2016c). This policy approach has not yet been implemented in Oman.

5.3.1.3. Sub-domain 3: Socioeconomic factors
5.3.1.3.1. Universal access to health and education
The questions in this domain that achieved the highest mean score were ‘Increased access to universal education policy’ and ‘Increased access to universal health services’ (Grade B) (see Figure 7). This may be because of policies implemented by the Ministry of Education to provide education at all levels free of charge in (primary, secondary and tertiary), and similar policies implemented by the MOH and other government health authorities to provide health care to all Omani citizens free of charge. The question did
not score a Grade A, however, and this may be because the quality of the services needs to be improved (e.g., curricula could be improved to international standards).

5.3.1.3.2. Environment
Access to a clean and safe environment in Oman was ranked joint lowest (Grade C). To improve the access to clean and safe environments, the Ministry of Environment has been implementing numerous related policies. Oman faces significant demand for water due to limited rainfall, and thus depends on groundwater. Omani water legislation was formulated to preserve water resources and to rationalise water use. Examples of legislation on water preservation are the Royal Decrees 82/1988, 29/2000 and 114/2001 seeking to preserve national water resources and to protect them from pollution (MOH, 2014). Although action has been taken to increase access to clean and safe environments, the survey participants’ responses (Grade C) show that there is still a need for improvement. The Omani government, specifically the Ministry of the Environment and the Municipality Department, has an obligation to the Omani nation to implement more effective policies and plans to ensure that this key determinant is adequately addressed.

5.3.1.3.3. Employment
Access to employment in Oman was ranked joint lowest (Grade C). Although the Ministry of Manpower has been implementing policies to improve access to employment (e.g., the Oman labour law, in Royal Decree 35 (Ministry of Manpower, 2003) and the Omanisation policy in Oman Vision 2020 (Oman, 1995), the country is still facing unemployment issues. The government and the Parliament of Oman have been making significant efforts to increase the employment rate. According to the World Bank, however, by 2018, unemployment in Oman had increased to 17% (from 5% in 2010) following the economic crisis due to low oil prices (World Bank, 2018). The Oman vision 2040, which was developed under the auspices of the Omani President, promised that the government will provide employment, care and services, especially for youth (Oman vision 2040 The preliminary document, 2013; Oman vision 2040, 2020; Al-Bahrani, 2019). Further
strategic action to increase employment among Omanis is necessary to improve their health.

5.3.1.4. Actions for improving policies and plans

One way in which the Health Promotion policy could be improved is by developing a Health Promotion policy team, with collaboration between the MOH and other relevant sectors, so as to drive Health Promotion policies for NCDs and their risk factors. This would be consistent with Nam & Engelhardt’s (2007) recommendations for improving Korean Health Promotion capacity. The European Action Plan for NCD Prevention 2016-2025 recommends that a policy team addresses NCDs and risk factors by means of economic and marketing measures targeting tobacco, food and alcohol; by reformulating and enhancing food products (specifically targeting salt, sugars and fats); by encouraging active living and mobility; and by ensuring that there is clean air in the environment (WHO, 2016c).

This is consistent with the IUHPE (2018) recommendation of a comprehensive approach that includes educational, environmental, policy and fiscal measures. To tackle smoking, obesity and physical inactivity, governments need to be committed to regulatory and fiscal measures (e.g., advertising bans and levies on products that cause harm). The WHO NCD Global Action Plan (WHO, 2013), and in particular its Appendix 3, details a menu of policy options and cost-effective interventions to assist member states in developing NCD prevention and control strategies. Perhaps the best-documented example of a comprehensive NCD policy is the WHO FCTC (WHO, 2003).

5.3.2. Integrated results for Domain 2: Core of expertise in Health Promotion

In this study, participants returned a higher grade in this domain (B: ‘Partially implemented’) than the WHO-EMRO-2010 grade (D: ‘Under development’). The following sections discuss the results of the two sub-domains, Health Promotion for NCD prevention and Health Promotion as best practice.
5.3.2.1. Sub-domain 1: Health Promotion for NCD prevention

The Oman-CMHP-NCDS-2017 did not use exactly the same questions as the EMRO questionnaire. While the latter asked about the existence of a Department for Health Promotion, the question in new tool was related to the existence of a specific Department of Health Promotion for the prevention of NCDs. This makes the high EMRO score of ‘B’ in domain 2 surprising. Participants suggested that such a Department (or a similar department) existed and that it was partially implemented; yet this department does not exist. It is possible that participants confused a Health Promotion for NCD department with the existing NCD department or with the existing health education department. This EMRO question must be re-phrased in a way that clearly distinguishes Health Promotion from these other activities.

In contrast to the quantitative results, most of the interviewees (n = 8) in the qualitative phase stated that a core of expertise in Health Promotion is required for prevention of NCDs and that there is currently no Health Promotion unit/section/centre/department to control and prevent NCDs in Oman. One interviewee said, ‘There is no identifiable “Health Promotion” unit /section /centre /department within the Ministry, or in the government’ (see Table 96, 1.2.2.1). While others reported, ‘There is no core of expertise and leadership within the national MOH for health promotion development, coordination and partnerships’ (see Table 96, 1.2.1), and ‘Oman has no infrastructure for health promotion within the MOH as well as in some other key ministries to push health promotion policies to improve health for the people of Oman’ (see Table 97, 2.4.2.1). This specificity is likely to be because these interviewees are public health specialists and most of them work MOH and are aware of the infrastructure of the MOH.

All interviewees noted that there was no central unit for Health Promotion with responsibility to build capacities in Health Promotion. A WHO NCD profile report from 2014 stated that Oman possesses an operational NCD department (which is part of the MOH), and Alawan et al. (2001) asserted that this body is instrumental to the process of
managing NCDs and related preventive strategies. The term Health Promotion is not used in the title of that Department, however, or in its description.

In Europe, NCD-related mortality has been reduced (WHO, 2016) because of the actions taken to prevent NCDs, one of which was the development of the WHO Department for the Prevention and Control of NCDs which has successfully demonstrated how to develop infrastructure and measures to exercise greater responsiveness to NCD-related issues (WHO, 2018). The tasks of the NCD department are based on the specific strategic aims of decreasing the burden of NCDs, ensuring greater levels of equality, enhancing levels of participatory governance associated with health (using WHO European Action Plan 2020 to define this), formulating measures and action plans related to NCD risk factors, prevention and management, and forming an in-depth multi-sectoral action approach to prevent and manage NCDs (WHO European Office, 2016). The IUHPE (2018) recommended that all countries build a Health Promotion institution to prevent NCDs at national and subnational levels, as follows, ‘Strengthen or build dedicated health promotion institutions at national and subnational levels’ (IUHPE, 2018 p.5). This is consistent with the view of an interviewee who suggested the need, ‘To develop institution for public health or for health promotion’ (see table 98, 3.6.1).

5.3.2.2. Sub-domain 2: Health Promotion as best practice
Another important finding in the phase two survey was that 83.1% of participants answered “Yes” to the question “Do you consider that the main focus of health promotion activity is appropriate as the best practice in Oman”, which could have meant that the participant believed that the main focus of Health Promotion activity was to prevent and control NCDs in Oman, which indicated that participants thought that Health Promotion activities might be required to control and prevent NCDs in Oman. This is consistent with the results of McQueen (2013) and Marmot and Bell (2019), who presented evidence that Health Promotion is best practice to prevent NCDs (i.e., better than clinical only approaches) (WHO, 2000, 2005, 2010, 2014, 2018; McQueen, 2013; Marmot & Bell, 2019; Van den Broucke, 2017).
In the qualitative phase, interviewees asserted the importance of Health Promotion. One interviewee indicated that it was important to, ‘Clarify that health promotion is about how to act to change the environment to make it more conducive to health and what we are actually going to do to improve people’s health’ (see Table 96, 1.2.3.1). Moreover, they also said that having a health education department and using health education strategies alone are not sufficient to prevent and control NCDs: ‘Using Health education strategy only is not effective enough to change behaviours or to improve NCDs’ prevention and control’ (see Table 95, 1.2.3.1). One interviewee noted that, ‘… health promotion does not mean health education and that health education is inadequate to prevent and control NCDs’ (see Table 96, 1.2.1.1), while another said that Health Promotion is not as big a concern as the clinical aspect: ‘The major concern is the clinical part of NCDs, rather than the promotive part to prevent NCDs’ (see Table 97, 2.1.3).

5.3.2.3. Actions for improving core of expertise

According to Catford (2005), the ‘core of expertise’ domain refers to the core of expertise and leadership within the national MOH for Health Promotion development, coordination and partnerships. Oman currently has no infrastructure for developing Health Promotion expertise. One way in which the core of expertise underpinning the Health Promotion capacity for NCDs could be improved is by developing a Health Promotion Department with multi-sectoral collaboration. Staff working in such a department should be chosen from different ministries, sectors and specialities related to improving health in Oman, and should be tasked with driving Health Promotion interventions, similar to the role played by the WHO European Office (2016) and Nam & Engelhardt (2007). Examples where this type of structural organisation has been implemented include (WHO, 2016), South Korea (Nam & Engelhardt, 2007) and Singapore (Lee, 2012).

5.3.3. Integrated results for Domain 3: Collaborative mechanisms within government

The overall mean for this domain’s stage of development is C (‘actioned’) (Score: 4.15). Both the Oman new tool and WHO-EMRO-2010 grades for this domain were C
(‘Actioned’); this means that work has started, but it is too early to assess it. The following sections discuss the results of the three sub-domains of Domain 3.

5.3.3.1. Sub-domain 1: Systematic hierarchical coordination of public health programmes
Available systematic coordination within national/state or lower-level public health programmes in the MOH scored grade C. A possible reason for the C grade is that the collaboration between the public sector and curative service sector is primarily at the health education level (DGP&S, 2015). For example, there are collaborations between the MOH Departments such as those for NCDs, Nutrition, School, Health Education and Community Initiatives in implementing health education interventions and activities that prevent NCDs.

5.3.3.2. Sub-domain 2: Collaboration between public health and curative services available
Evidence of collaboration between the public health sector and the curative services sector within MOH at the national and provincial level scored grade C. A possible reason for the C grade is that the collaboration of the public sector and curative service sector is primarily at the health education level (DGP&S, 2015). For example, there is collaboration between the MOH Department of Health Education and the Department of Medicine at the Royal Hospital to produce health education materials to raise awareness among diabetic patients on how to take care of their diet, and there are many materials available that explain methods for caring for diabetes-related foot injuries (MOH, 2015).

5.3.3.3. Sub-domain 3: Collaboration between government ministries
Available evidence of collaboration between ministries within the national government at the national and provincial and local levels scored grade C. There is some collaboration between the government sectors for control and prevention of NCDs, such as the collaboration between the Ministries of Commerce, Agriculture and Municipality and the Department of Nutrition in the MOH for specification and labelling of imported food, and for reducing fatty, sugary and salty food (DGP&S, 2015; MOH, 2015).
Most of the qualitative participants (n=6) stated that there were gaps in collaboration between the MOH and other ministries, other sectors and NGOs, leading to activities being duplicated or omitted due to lack of strategic collaboration and technical guidance between sectors. One interviewee said, ‘Technical guidance is needed on how other sectors can do a better job to benefit the health of the people in Oman’ (see Table 96, 1.3.1.3). Another noted, ‘Lack of collaboration with other sectors either within the ministry or with external agencies causes duplication of activities and some activities is missing and nobody is taking care of them’ (see Table 96, 1.3.1.2). Others pointed out duplications and omissions, ‘There are duplications of activities, some activities are missing and nobody is taking care of them in ministries because of a lack of strategic planned collaboration’ (see Table 96, 1.3.1.2).

Behavioural risk factors associated with NCDs, both at the level of the individual and the population as a whole, are now acknowledged as being affected by several factors interacting across many sectors, making collaboration between sectors vital to successfully preventing NCDs (WHO, 2005). One interviewee noted, ‘Without multi-sectoral collaboration, health promotion in Oman cannot succeed’ (see Table 95, 1.3.1.5). Another interviewee stated, ‘Health promotion strategy is not only for the health sector ... to overcome these gaps, we need to have a proper strategy involving other sectors’ (see Table 96, 1.3.4.2).

According to the WHO Global Action Plan 2013-2020, successful multi-sectoral collaboration for NCD-related Health Promotion policy development and implementation requires leadership and network interaction on health issues from multiple stakeholders with the MOH. It is also essential to discuss issues of power, involvement, resources, trust and reciprocity (WHO, 2013). According to Hunter et al. (2019), there is no single organisation or sector that can solve the problems alone, which indicates that collaboration is required across the political, economic, environmental, interpersonal and individual domains, and this was recognised by the key informant interviewees.
5.3.3.4. Actions for improving collaboration

For collaboration to move beyond ‘actioned’ to ‘fully implemented’, integrated action from different units within the MOH will be needed to improve cooperation around common Health Promotion issues. In addition, different departments and national agencies within the government should be assisted to cooperate in addressing the economic, social and environmental determinants of health. Government system-wide efforts are needed to improve the social determinants of health, such as early childhood education and parenting skills, education and lifelong learning, working and employment conditions, poverty reduction and ensuring a healthy standard of living, housing and the environment, and prevention of ill health (Catford, 2005; Marmot & Bell, 2019). Partnering mechanisms could be varied but must be effective in supporting collaboration for Health Promotion (e.g., health with education/agriculture/transport, etc.). A collaboration strategy would need to be developed by a governing structure whose main remit is Health Promotion. This collaboration strategy would need to frame: i) potential collaborators; ii) a clear description of tasks for each collaborating unit, and iii) plans for financing (Taylor-Powell, 1998). A useful example of collaboration for NCDs is the European Union collaboration strategy, and this could be built upon in Oman (WHO, 2016; Mittelmark et al., 2006).

Once such a strategy is complete, it will need to be implemented. There are numerous approaches to make this implementation easier, but a good understanding would be required of the multi-sectoral networks involved. One way to do this would be to develop a multi-sectoral network analysis (Hunter et al., 2019). A multi-sectoral analysis helps to clarify which organisations are connected to each other, and what the quality of these connections is. The resulting data can be used to strengthen ties. Network analysis helps in identifying collaborators that are central to the network and are therefore influential. This can also help in efficient allocation of resources. Another important factor for the collaboration to be successful is the development of power-sharing and trust-building mechanisms that can be sustained throughout the course of the partnerships, as identified by Jones and Barry (2016).
5.3.4. Integrated results for Domain 4: Health Promotion programme delivery

The overall mean for this domain is D (‘Under development’), with a score of 2.75. This was the lowest scoring domain, with a range between C and D. Nonetheless, this was higher than that awarded by WHO-EMRO (2010), which was E (‘Being considered’), meaning that the activity was being considered for implementation, but no firm commitment had yet been given. Although there was an increase in the grade in the current survey, D is still a low score and was the lowest score among all eight assessed domains. This indicates that the delivery structures and mechanisms for Health Promotion priorities at national and/or international levels, including support for inter-sectoral partnerships, are not well established in Oman.

According to Catford (2009), structured programme delivery involves a strong and engaged government health department with high levels of skill and knowledge to drive policies, programmes and funding mechanisms; skilled and motivated primary healthcare workforce who can reach out and provide relevant services to the whole population and those particularly at risk; informed and empowered communities and civil society stakeholders able to respond to and participate in opportunities to improve health and wellbeing and relevant and responsive education and training bodies focused on developing ‘best practice’ knowledge, advanced practical and leadership skills and relevant Health Promotion experience.

Consistent with the results reported by LaFond et al. (2003), programme structure for Health Promotion needs to include a strategic plan that encompasses the vision, mission, objectives, inputs, processes, outputs, outcomes and impacts of the programme. According to Catford (2009), however, the delivery of the programme is the channels, which include advocacy, enabling and mediation. This will require decentralisation of respondents at the national, regional and provincial levels in the country, across all the relevant sectors that work on the prevention of NCDs and their risk factors. The mechanism of programme delivery should include innovative and resourceful networks of NGOs and professional associations to advocate for new responses and assist in the
delivery of the programmes. In addition, the mechanisms of good programme delivery require applied research and the development of organisations able to monitor progress, develop evidence-based solutions and support their effective dissemination and uptake (Catford, 2009). The following sections discuss the results of the three sub-domains of Domain 4.

5.3.4.1. Sub-domain 1: Hierarchical delivery of Health Promotion programmes
Available structures/mechanisms that enable delivery of Health Promotion activities for NCD prevention into the regions scored grade D. Such structures and mechanisms would require nationally centralised Health Promotion planning but decentralisation of Health Promotion programme delivery (WPR, 2005). This low D grade indicates that Oman is not doing well in the decentralisation and dissemination of Health Promotion programmes for the prevention of NCDs.

The qualitative findings were consistent with the quantitative results in reporting a low level of Health Promotion programme delivery in Oman. Most of the qualitative participants (n = 9) stated that there is a gap in Health Promotion programme delivery, not only for the prevention of NCDs and their risk factors but also for other national programmes related to NCDs, such as programmes for social determinants of health ‘There is a weakness in programme delivery’ (see Table 95, 1.4.5). The reported reasons for the low level of Health Promotion programme delivery in Oman included finance, ‘There is no specific budget for Health Promotion programmes delivery that control and prevent NCDs’ (see Table 95, 1.4.10). In this regard, the participants identified the low oil prices in recent years as the main reason underlying the cutting-back of several programmes in Oman.

Participants shared possible solutions to bridge the gaps in Health Promotion programme delivery for NCDs, such as ‘Delivery can be improved by having clear roles and responsibilities for every party involved; and by developing strategic partnerships with other governmental sectors for the social responsibility that include programme delivery of Health Promotion’ (see Table 96, 1.4.6). This interviewee believed that programme
delivery would be improved by collaboration with other sectors, and his response refers to the idea of horizontal delivery of Health Promotion programmes that will involve other sectors. The interviewee expressed the reason as 'for the social responsibility'. This participant meant that, by collaborating with other sectors and giving clear roles and responsibilities, the social determinants of health and accountability in preventing NCDs can be improved. Another interviewee argued that ‘there are no strategic disseminations of rules under a clear strategic plan between the multiple sectors involved in Health Promotion programmes because there is no effective and efficient collaboration and partnership’ (see Table 95, 1.4.3). Here, the participant proposed effective collaboration and partnerships to build Health Promotion multi-sectoral capacity to implement NCD-related health programmes and improve the delivery of these programmes. This is consistent with the recommendation of Catford (2009, p.2) ‘the prerequisites and prospects for health cannot be ensured by the health sector alone; coordinated effort is needed across all sectors’. High-level governmental action is required to develop a strategic plan for multi-sectoral collaboration, in line with the WHO global NCD plan of action 2013-2020, which calls for strengthening multi-sectoral action plans:

‘As appropriate to the national context, set up a national multi-sectoral mechanism—high-level commission, agency or task force—for engagement, policy coherence and mutual accountability of different spheres of policymaking that have a bearing on noncommunicable diseases, in order to implement health-in-all-policies and whole-of-government and whole-of-society approaches, to convene multi-stakeholder working groups, to secure budgetary allocations for implementing and evaluating multi-sectoral action and to monitor and act on the social and environmental determinants of noncommunicable diseases’ (WHO, 2013, p.14).

Five interviewees mentioned the need to secure the sustainability of programmes, which is consistent with the recommendations of WHO/WPR (2005), which stated that ‘sustainability of programmes delivery is a key issue in contexts where donor support is critical for getting things done’ (WPR, 2005 p. 19). In Oman, many public health
Programmes for NCDs are implemented by the Department of NCDs within the MOH, which oversees the clinical issues of NCDs. Another department that provides activities for NCDs is the Health Education Department. These two departments have respondents in the regions and provinces to deliver their activities. Each of these departments has a plan of work that has been integrated within the five-year health development plans since 1991. Their activities do not go beyond health education (MOH, 2015), however, and neither have staff with expertise in Health Promotion delivery.

Another weakness of programme delivery in Oman is that the MOH does not address the causes of NCDs in their plan of action. This is a problem because many causes of NCDs are not narrowly clinical (McQueen et al., 2013; Van den Broucke, 2017; Catford, 2005, 2009; WHO, 2018) and therefore are not addressed by the current health system. For example, a way of reducing smoking is to raise taxes on tobacco, and taxes are not under the control of the MOH. To deliver effective interventions, therefore, NCD prevention programmes need to go beyond the MOH to collaborate with other sectors (e.g., Ministries of Commerce, Environment, and Municipality) and the WHO, who can help address NCD risk factors in additional ways (Abdul Rahim et al., 2014, Al-Lawati et al., 2017).

Evidence from the quantitative and the qualitative phases of this research shows that Omani Health Promotion and public health intervention programmes do not have sufficiently developed structures and mechanisms to develop Health Promotion capacity interventions for NCD prevention. This means that Oman has to improve the networking and dissemination process of NCD programmes, and to improve the structure of these programmes, as well as develop more interventions to tackle NCDs and their risk factors. All such programmes need to be planned and monitored according to the strategic plan of action for the programme delivery, as recommended by WPR (2005) and Catford (2005, 2009). While Oman has a hierarchical structure in place for designing and delivering
health education programmes from national to regional and thence to provincial/local levels, it does not yet have a complex network for programme delivery that involves other relevant sectors. Such a network is essential to improve the Health Promotion capacity for NCD prevention (MOH, 2015; 2018).

5.3.4.2. Sub-domain 2: Health Promotion planning, implementation and evaluation

Use of evidence-based Health Promotion planning, implementation and evaluation for NCD prevention scored grade D. The lack of use of evidence-based Health Promotion planning, implementation and evaluation for NCD prevention might be because of the lack of evaluation in the area of monitoring and evaluation of programme delivery in Oman. Indeed one of the interviewees specifically highlighted the need for ‘Evaluation, monitoring and conducting impact studies on programme deliveries’ (Table 96, 1.4.4). The WHO’s global plan of action (2013) referred to networking and equality of programme delivery and indicated the need to strengthen local, provincial, national and regional programme delivery capacities to address and effectively combat non-communicable diseases, which will lead in turn to sustainable programmes and capacities.

There is a need to improve the planning of programme delivery, as one interviewee noted there is a ‘lack of proper strategic design of these programmes where the inputs, the process, the output and impact are planned under specific vision goals and objectives’ (see Table 96, 1.4.3). Another interviewee suggested that ‘Programme delivery can be improved by having clear rules and responsibilities for every party’ (see Table 96, 1.4.3), thus indicating defects in the programme delivery structures and mechanisms.

Programme delivery involves applied research to develop evidence-based solutions and support their effective dissemination and uptake (Catford, 2009). Evidence-based Health Promotion planning, implementation and evaluation is the use of information derived from formal research and systematic investigations to identify causes and contributing factors to health needs, as well as effective Health Promotion actions (i.e., planning, implementation and evaluation) to address these in given contexts and populations.
(Smith et al., 2006). These need to include evidence-based Health Promotion planning, implementation and evaluation for the prevention and control of NCDs.

Many experienced capacity-building practitioners feel that capacity measurement cannot be separated from the process of building capacity itself (LaFond et al., 2003; Catford, 2005). Programme managers often use capacity assessment tools to raise awareness regarding capacity problems, stimulate commitment to improving capacity among stakeholders and establish self-determined benchmarks (Hawe, 1997; LaFond et al., 2002, 2003). The focus of this would be internal, however; whereas, in practice, external stakeholders often require the monitoring and evaluation of capacity building for the sake of accountability (Brown et al., 2001; LaFond et al., 2002, 2003; Catford, 2005, Mittelmark et al., 2006).

Seven interviewees suggested improving Health Promotion programme delivery by close monitoring and evaluation; conducting impact studies for programmes and increasing Health Promotion training and education. One interviewee proposed a monitoring and evaluation framework, which was consistent with the findings of LaFond et al. (2002, 2003). The emphasis on this dimension of implementation is also consistent with the European plan of action (WHO, 2016c).

5.3.4.3. Sub-domain 3: Combination of intervention strategies

Available evidence on the use of combinations of intervention strategies in Health Promotion activities for the prevention and control of NCDs scored grade D. There is a need to use a combination of Ottawa Charter intervention strategies and programmes that promote health for the prevention and control of NCDs, including empowerment through health communication and the development of environments that are supportive for health. Programmes planned among multi-sectoral partners to improve the determinants of health include access to clean environment, universal health, universal education and employment (Catford, 2005, 2009; WHO 2010, 2018; WHO, 2016c; Abdul Rahim et al., 2014). Good examples of potentially appropriate plans are those
implemented in Europe (WHO, 2016), though these would need to be adapted to the Omani context.

In Oman, many Health Promotion programmes are based on primary healthcare, community health, preventive medicine and health sector reforms. Health Promotion programmes need to be developed through collaboration with non-governmental sectors in Oman. Collaboration will also lead to better programme development and better training and development of a Health Promotion workforce in each of the collaborating sectors; most importantly, collaboration will lead to better allocation of budgets to finance Health Promotion programmes and activities (WHO, 2018, 2013, 2010, 2005; WHO, 2016c). As demonstrated by international evidence, high-level governmental action is required to improve Health Promotion programme delivery. The WHO’s global plan 2013-2020 for developing strategic multi-sectoral collaboration in the context of NCDs advises the following:

‘As appropriate to the national context, set up a national multi-sectoral mechanism — high-level commission, agency or task force — for engagement; policy coherence and mutual accountability of different spheres of policymaking that have a bearing on non-communicable diseases, with the purpose to implement health-in-all-policies and whole-of-government and whole-of-society approaches, to convene multi-stakeholder working groups; to secure budgetary allocations for implementing and evaluating multi-sectoral action and to monitor and act on the social and environmental determinants of non-communicable diseases’ (WHO, 2013 p. 14).

The fourth, fifth, sixth, seventh, eighth and ninth five-year Health Development Plans of Oman (MOH, 2000-2020) included programme plans for NCDs, which tackle the four diseases and the four main risk factors, although Health Promotion is not explicitly mentioned. Although these programmes have been delivered, they do not include many Health Promotion approaches, such as empowerment through health communication, or the development of environments that are supportive to health, which, as Catford (2005)
argued, are the types of programme that are best delivered using combinations of intervention strategies. In addition, the programmes targeting the determinants of health, the four NCDs, and their risk factors, currently lack a sufficiently diverse scope. These need to include programmes that target the political, economic, social, cultural, environmental, behavioural and biological determinants through establishing supportive environments, access to information, life skills and opportunities for making healthy choices, as well as equal opportunities and resources to enable all people to achieve their fullest health potential (Catford, 2005; WHO, 2018; European NCDs Plan of Action, 2016; Abdul Rahim et al., 2014).

Multi-strategy interventions for programme delivery include policies and laws on food or tobacco; reorientation of services and advocacy for health (Nam & Engelhardt, 2007). In Oman, although advocacy for NCD curative programmes, such as the programme of early screening at 40 for NCD prevention, exists in all PHC services, there is no advocacy for NCD preventive programmes. Interviewees emphasised the importance of advocacy in Health Promotion in Oman, with one interviewee suggesting the need to ‘advocate for Health Promotion programmes’ (see Table 95, 1.4.9.3). According to Barry et al. (2014, p. 2) advocacy is based on traditional notions, ‘of civil society and of the citizen as one who takes responsibility not just for him or herself but for his/her neighbour and for the process of change’. In this research, the principle of advocacy is the representation or empowerment of vulnerable people who are at risk for NCDs, and advocacy can be viewed as an equity tool, through raising awareness of available services for NCD prevention or by raising their awareness of screening services that enable them to get timely treatment and avoiding complications of NCDs.

5.3.4.4. Actions for improving programme delivery

To implement effective delivery of Health Promotion for NCD programmes in Oman, it is necessary to have high levels of capacity development in the other seven domains. Since six of the other domains have a ‘C’ or ‘D’ grade, it is unsurprising that this domain scored a ‘D’. For successful programme delivery it is necessary to have multiple types of
programmes and to use different and innovative methods in the designing and implementation of the programmes (LaFond et al., 2002; LaFond & Brown, 2003) rather than depending only on health education (Nam & Engelhardt, 2007; Catford, 2005; WHO, 2018; Abdul Rahim et al., 2014).

As noted above, other possible means of improving programme delivery would be to establish a new Department of Health Promotion for NCD prevention or a new Health Promotion unit under the Department of NCDs that can manage the four Health Promotion programmes for the respective NCDs and their risk factors (Catford, 2005; WHO, 2001, 2005, 2010, 2014, 2018). To improve Health Promotion programme delivery, collaboration is required within a range of settings (WPR, 2005; European Commission, 2014, European NCD plan 2016-2025; WHO, 2018) and for that to happen, coordinated effort is needed across all sectors: public, private and community. Health promoters have a major responsibility to mediate between groups with different interests and expertise in the pursuit of health. Health Promotion programmes require a diverse set of skills, disciplines, entry points, platforms and levels of authority, coupled with adequate human and financial resources as well as political will (Catford, 1993, 2005, 2009).

A successful example of an NCD prevention programme was developed via the European Action Plan 2016-2020, which has resulted in lower NCD-related mortality, morbidity and disability in Europe (WHO, 2018). This included delivery of multi-sectoral programmes for NCDs and their risk factors aimed at reducing consumption of tobacco, alcohol and unhealthy foods. This was achieved by improving capacity and training for primary healthcare professionals on appropriate nutrition counselling and weight monitoring and management; improving capacity and training for professionals in nutrition and delivering high quality nutrition services in healthcare settings; promoting healthy meals in health and social care institutions, and integrating physical activity programmes into prevention, treatment and rehabilitation. All these programmes and interventions have a relatively low cost and can be implemented in all countries, including Oman, to prevent and control NCDs.
5.3.5. Integrated results for Domain 5: Health Promotion partnerships

The overall quantitative result from the Oman-CMHHPI-NCDS-2017 for the stage of development of Health Promotion partnerships is C (‘Actioned’), with the individual grades in domain 5 ranging between C and D. This represents an improvement from 2005, where the grade was E (‘Being considered’) (WHO-EMRO, 2010). The following sections discuss the results of the three sub-domains of Domain 5. It is important to note that interviewees in phase three answered about partnership and collaboration together because they thought they referred to the same domain (section 4.2.5.3).

5.3.5.1. Sub-domain 1: Collaboration between NGOs, civil society and government

The mean value of the sub-domain: collaboration of NGOs/civil societies and national government scored a grade C. The 2010 WHO-EMRO survey called for collaboration between NGOs/civil societies and national government for joint activities that promote health by preventing and controlling NCDs in Oman in areas such as: i) tobacco consumption, ii) unhealthy diet (consumption of fatty, sugary and salty food), iii) physical inactivity, iv) consumption of illicit drugs and alcohol, v) cardiovascular diseases, vi) diabetes, vii) cancer, and viii) chronic respiratory diseases, and argued that these partnerships should involve Health Promotion settings, for example, schools, workplaces, community and cities.

Many NGOs operate in Oman, including United Nations bodies (WHO, UNICEF, UNFPD, FAO), and population and disease-specific groups such as, Oman Women Association, Oman Medical Association, Oman Public Health Society, Oman Cardiac Diseases Association, Oman Chronic Respiratory Diseases Association, Oman Cancer Association, Oman Diabetic Association, Oman Disability Association and National Consumer Agencies. These NGOs collaborate among themselves and with other non-profit organisations, on many issues. For example, the WHO, as well as other UN agencies, collaborates with the MOH in raising awareness of diseases and providing technical support for Health Promotion activities. The C grade might indicate, however, that these partnerships need
to improve in the context of tackling NCDs and their risk factors. The C grade also reflects the lack of a strategic partnership plan of action between the MOH and the NGOs.

All NGOs have different characteristics, which in turn affect their influence; these include their health focus, history, primary mission, and their links with international NGOs, their engagement with society at large, their composition and their independence from government. Some NGOs consist mainly of citizens, while others comprise professionals and serve in the form of professional associations. One interviewee said,

‘Well having partnership with governmental and NGOs and private is a key area that needs to be strengthened. And we can do that by having a shared vision with these sectors, by making them fully understand their roles and responsibilities’ (see Table 95, 1.5.1).

Most interviewees (n = 8) emphasised the need for strategic partnerships that will enable the participation of other governmental organisations, NGOs and the private sector in developing Health Promotion programmes to improve programme delivery to prevent NCDs. One interviewee noted a need to, ‘Develop a comprehensive strategy with all governmental and NGOs and private partners for health promotion’ (see Table 95, 1.5.3.1.). Another relevant comment was that ‘Strategic partnership can be established in a different way by statistics, by explaining to them successful stories of partnership from different countries, by having a shared plan of action, by planning with them, also by developing strategies with them’ (see Table 95, 1.5.3.1).

5.3.5.2. Sub-domain 2: Collaboration between private sector and government

Collaborations between private sector establishments and national government scored grade C. This indicates that partnerships need to be improved between private sector establishments and national government for the prevention of NCDs and their risk factors, and that these partnerships need to be driven by a strategic plan of action. Even though private sector partnerships have improved since the WHO-EMRO study in 2010, there are still many areas of the partnership with the private sector that need to be
improved - such as financial support and strategies to provide services for NCDs and their risk factors. One example of possible partnership with the private sector was described:

‘Private sector, they have a role in preventing NCDs, as if we work with them, they can produce different good quality products ... So, if we work with private sectors, the industry of food, industry of poultry, even for sponsorship for this, then they can understand why this bad food can affect the health of people. So, they will work with us on reformulating their products and improving the quality of their products’ (see Table 95, 1.5.4).

The private sector can provide financial, technical, technological, training and educational support to the national government. One interviewee said, ‘There is a need to include all stakeholders (government, private sector and community)’ (see Table 95, 1.1.5.2). Another interviewee recommended, ‘the social responsibility programmes within the private sector, this is one of the opportunities we should utilise by having a strategic partnership with them’ (see Table 95, 1.5.3.1). One possible cause of the gap in partnerships was raised by one interviewee: ‘The gap in collaboration is because Oman has no health council that can regulate everything related to collaboration and partnership’ (see Table 95, 1.3.1.1).

5.3.5.3. Sub-domain 3: Collaboration between private sector and NGOs/civil society

Collaboration between the private sector and NGOs/civil societies scored grade B. The B grade indicates an improvement in the partnership between the private sector and NGOs in Oman since 2010. Findings from the interviews differed, however. Most interviewees (n = 8) reported a lack of involvement of the private sector, NGOs and the community, as well as a lack of shared vision across different sectors. A multi-sectoral network analysis, which was explained under Domain 3 above, also needs to be applied in this context to improve partnerships (Van den Broucke, 2017; Hunter et al., 2019).

In some cases, these partnerships can be complex and to implement them it is necessary to have multi-sectoral plans (Abdul Rahim et al., 2014). Examples of relevant Health
Promotion partnerships are those targeting risk factors for cancers that involve the government, food companies, sports businesses and NGOs delivering a combination of Health Promotion initiatives and social marketing (WPR, 2005). In the Global Diet and Physical Activity Strategy (WHO, 2004), for example, partnerships serve to encourage producers of fast food to create healthier menus and offer less costly, more nutritious, food choices (WPR, 2005).

At the time of data collection (2017), there was no multi-sectoral plan for NCD prevention in Oman, although subsequently a plan has been partially developed (Directorate General of PHC, 2018). According to the literature, one reason to create partnerships is to avoid duplicating efforts that prevent the effective use of resources (WHO, 2018, 2014, 2011). Existing duplication was reflected in the C grade, as was the lack of a multi-sectoral plan (Taylor-Powell et al. 1998; Hawe, 2001; WHO, 2018, Abdul Rahim et al., 2014; Van den Broucke, 2017).

The current study provides evidence that reform is required with respect to partnerships for Health Promotion activities aimed at the control and prevention of NCDs in Oman. This would include increasing the number of public health actors engaged in work related to the control and prevention of NCDs, by making more use of the private sector, partnerships, foundations and civil society organisations. Here, the participants’ opinions are in line with the latest evidence. For example, Hunter et al. (2019) recommended that, in order to reduce the incidence of NCDs, there should be partnerships not only within the health sector but also between organisations and agencies that operate outside the traditional sphere of health. He also emphasised the need to build national action plans, since these inherently require the development and implementation of cross-sectoral and multi-stakeholder networks that can provide a synergistic, concerted and coherent approach for the prevention of NCDs and their risk factors.

Although most interview participants recommended mandated multi-sectoral partnerships, it is interesting to note that the MOH had already mandated multi-sectoral partnerships for NCD prevention in 2016 before the interviews occurred. This mandate
did not mention Health Promotion explicitly, however. Based on the combined results, the most important suggestions given by the participants for strengthening existing government support for Health Promotion capacity directed at preventing and controlling NCDs are increasing the level of government commitment, establishing an independent authority to prevent and control NCDs and advocating that the higher committee for NCDs should be represented by higher level authorities. Although these three suggestions have been previously addressed by the government of Oman through its Mandate of the National Multi-sectoral Committee for the Prevention and Control of NCDs (MOH, 2015) and its National Policy for the Prevention and Control of NCDs and their Risk Factors (MOH, 2016), the participants were clearly not familiar with these policy documents. What is now required is greater implementation and advocacy on the Mandate of the National Multi-sectoral Committee and the National Policy for the Prevention and Control of NCDs and their Risk Factors and a plan of action as well as their implementation.

With regard to the method of partnering, it is important to recognise and respect that every sector has unique physical and human resources, values and capacities which can be combined to facilitate a universal vision in relation to how to tackle NCDs (Jones & Barry, 2011; Hunter et al., 2019; Taylor-Powell, 1998; Tennyson, 2011). These variations between partners can threaten the sustainability of partnerships if not addressed strategically at the outset (Estacio et al., 2017; Health Promotion framework, 2011; Hunter et al., 2019; Taylor-Powell, 1998; WPR, 2005). In 2018 the IUHPE recommended that governments develop strategic action plans to address health and health-equity in all policies, a health impact assessment of public policies, multi-sectoral implementation and monitoring of improvements in health, equity and determinants of health indicators. They called for ‘specified accountabilities and specific objectives to address health inequity’ (IUHPE, 2018 p. 5).

Inter-sectoral action can be complex and challenging, but knowledge and experience does exist as to which institutional processes best promote inter-sectoral policy and practice partnerships. According to the European action plan, priority multi-sectoral action areas
are: i) leadership and Governance to achieve real improvements in health by improving health for all and reducing inequalities and improving participatory governance for health, ii) improving the determinants of NCDs and their shared risk factors which means that multi-sectoral, whole-of-government and whole-of-society responses are required, and iii) the influence of public policy in sectors such as trade, taxation, agriculture, education, environment and transport (European Action Plan, 2016-2025).

In conclusion, partnerships are a mechanism to improve the social determinants of health and reduce inequities through a holistic approach. Oman, however, is not doing well in the areas of risk factors and the social determinants of health (grades C-D), and therefore, attention is required here.

5.3.5.4. Actions for improving partnership

A strategic partnership plan of action is required to enhance and complement the mandate of the National Multi-sectoral Committee for the Prevention and Control of NCDs (MOH, 2015), and the National Policy for the Prevention and Control of NCDs and their Risk Factors (MOH, 2016). There is a need to improve networks between all partners by using multi-sectoral network analysis in Oman, however (Hunter et al., 2019).

For effective collaboration across sectors in Oman, it is necessary to be persistent and patient over a period of time because there is no swift or easy solution to the issue of the prevention of NCDs. Partnerships across various sectors can be very successful in the long term, if planned and executed in a systematic strategic manner via a collaborative strategy which incorporates the following: i) systems which involve planning and decision making, communication, the keeping of records and documentation, oversight and continuous programme/partnership enhancement, and personnel development; ii) staff; iii) services; and iv) resources (Tennyson, 2011).

A useful example of collaboration for NCDs is the European Union partnership strategy which was implemented by the WHO European office collaborating centres working in with other partners such as the European Union and its institutions, other United Nations
organisations, the existing health-promoting networks, such as the International Network of Health Promoting Hospitals and Health Services, the Schools for Health in Europe network, the Healthy Cities network and the Regions for Health Network, civil society, nongovernmental organisations and relevant professional and patient associations, and developing partnership with the national, international, intergovernmental organisations and non-State actors (WHO, 2016c).

5.3.6. Integrated results for Domain 6: Health Promotion professional development
The overall quantitative result for the stage of development of this domain was C (‘Actioned’). This is an improvement compared to that reported by WHO-EMRO (2010), which was D. This C grade seems too high for 2017 because Oman has no training for Health Promotion or for Health Promotion for NCD prevention (Directorate General of Planning, 2015). The following sections discuss the results of the three sub-domains of Domain 6.

5.3.6.1. Sub-domain 1: Government support for undergraduate Health Promotion education
Government support for Health Promotion education and training at the undergraduate level scored grade (C). This grade may be high because it was only in 2019 that Oman started to support such training by sending undergraduate students abroad to UK, Ireland and Australia and other countries for Health Promotion education and training at the undergraduate level.

5.3.6.2. Sub-domain 2: Government support for undergraduate NCD education
Government support for Health Promotion for undergraduate education level scored grade (C). This is too high because Oman only started to support such training in 2019 by sending young people recently graduated from secondary school for overseas undergraduate education in areas relevant to NCDs such as podiatrist training for diabetes-related foot problems.
5.3.6.3. Sub-domain 3: Government support for postgraduate Health Promotion education

Government support (in cash and/or in kind) for Health Promotion postgraduate education level scored grade (B). A grade B is too high, however, given that Oman has no training for Health Promotion or for Health Promotion for NCD prevention at the Masters’ or Doctoral level (DGP&S, 2015). A reason for this disparity may be that, between 2006 and 2010, some graduates who had a university degree in science received one year of training in health education and nutrition so that they could specialise as health educators. This health education and nutrition training ceased in 2010, however, and there has been no health education or Health Promotion training since then. It is possible that participants in this study heard about this training from 2006-2010 or are familiar with people who have a Masters’ degree in health education or public health, and therefore, they may assume that the training persists to this day. Battel-Kirk and Barry (2011) argue that there is ample evidence for the need to develop workforce capacity for Health Promotion globally, perhaps because this is a relatively new discipline that started officially in 1986 (WHO, 1986). Thus, the weaknesses in Health Promotion training in Oman are in line with what the literature has identified globally.

In contrast to the quantitative results, most of the interviewees stated that there were no advanced Health Promotion education and training programmes in the country. One interviewee said, ‘There are not enough development [of] health promotion professional, practitioners, researchers and policymakers’ (see Table 95, 1.6.1). Another noted, ‘There are no advanced health promotion education and training programme in Oman’ (see Table 95, 1.6.1.2). A third said, ‘There are a few people who are aware of it which means that training are deficient in the area of health promotion’ (see Table 95, 1.6.2.1). Furthermore, the development of Health Promotion professionals, including practitioners, researchers and policymakers is insufficient, as stated by one interviewee, ‘There are no sufficient qualified human resources with sufficient skills and knowledge in health promotion to deliver essential health promotion’ (see Table 95, 1.6.1.2). As noted by one interviewee, ‘The country therefore requires more trained personnel at national, regional and wilayah level. Nonetheless, even those who have been trained in Health education lose their
interest due to lack of leadership and infrastructure for Health Promotion’ (see Table 95, 1.6.2).

There is no formal training in Health Promotion, nor are there institutes for training in Oman. Therefore, Oman has a need to increase its existing Health Promotion capacity by raising awareness, introducing incentives and providing training in Health Promotion, both within the MOH and in other sectors. WHO (2005) reported that education and training, the development of professional Health Promoters, professional associations and training institutes, such as schools of Population Health (or equivalent), all depend on adequate funding. In Oman, there is not enough funding available because all the training fund is allocated to clinical training. One interviewee said ‘The country is mainly focused on building health care facilities and training citizens to provide curative services. The focus on health promotion is not that big; it is not a top priority’ (see Table 95, 1.6.4).

In terms of assessing a country’s Health Promotion capacity, the different approaches to training, such as undergraduate, postgraduate or continuing professional development programmes, should be explored further because they have important implications for who is trained, the numbers of people who can be trained, credentialing, possibilities for further education, the skill base developed and its portability across settings (WHO, 2005). Sparks (2007) notes the strong need to build capacity within local educational institutions so that capacity-building efforts can be more sustainable and locally relevant and where it is possible to increase translation of information from and to dominant languages to address information gaps. Providing a skilled workforce will help to improve the leadership in Health Promotion, improve Health Promotion practice and implementation and improve partnerships and advocacy for Health Promotion. The literature on Health Promotion competency provides ample evidence for the need to develop workforce capacity for Health Promotion. This will require a future strategic plan for building a workforce in Health Promotion through information, education, research and debate on the best approaches for Health Promotion workforce development at the
national, regional and provincial levels (Battel-Kirk & Barry, 2011; Van den Broucke, 2017).

Interviewees’ suggestions for improving professional development in Health Promotion included, ‘That can be done at health care professional level through target or specific training on various elements related to health promotion. Either prevention or control. You know providing them with more knowledge and skill’ (see Table 95, 1.6.1). Another interviewee referred to the need for equality in disseminating the experts between the national and other regional and provincial levels:

‘It’s a common problem in several countries. The capitals are usually doing excellent, whereas the other regions are not doing that well. One reason is that the best experts are in the capital. All the resources, whether financial, physical or otherwise, all of them are being invested only in the capital or the main cities, and people tend to neglect and forget about the smaller cities and villages. Second, there is also the migration of experts from the interior regions to the major cities, where they have all the facilities and resources and better jobs are available’ (see Table 95, 1.6.2.3).

To produce skilled Health Promotion workforces for the prevention of NCDs through professional development initiatives, countries need to make substantial and on-going investment, linked to a long-term strategy. Hence, the countries’ stages of development in this domain may be associated with the nature of their tertiary education infrastructure for public health, their economic status and their relationship to donors that fund participation in professional development programmes. A number of countries take part in third-party funded schemes that enable their eligible workers to be trained in, for instance, Master of Public Health degrees, as well as more specialised research. WPR (2005) noted that these have an important place in capacity-building in countries.
The European Health Promotion Competency Project, ‘Developing Competencies and Professional Standards for Health Promotion Capacity Building in Europe (CompHP)’, was one of the best projects aimed at providing effective Health Promotion professional development. It sought to determine fundamental competencies related to Health Promotion practice, training and education in Europe (the Galway Consensus Statement Allegrante et al., 2009; Barry et al. 2009; IUHPE 2009). According to Barry et al. (2009), ‘developing a competent Health Promotion workforce is a key component of capacity building for the future and is critical to delivering on the vision, values and commitments of global Health Promotion’. The core competencies can help Health Promotion organisations by: i) identifying staff development and training needs, ii) providing a basis for job descriptions, interview questions and frameworks for evaluation and quality assurance, iii) identifying the appropriate numbers and mix of Health Promotion workers in a given sitting, and iv) assisting employers and managers to gain a better understanding of Health Promotion roles in individual workplaces (Dempsey, Barry & Battel-Kirk, 2011).

The IUHPE (2018) stated that:

‘The International Union for Health Promotion and Education (IUHPE) has a strong history in advancing global health promotion and building health promotion capacity. IUHPE activities have included the development of an international consensus on health promotion competencies, the development of a global scheme for accreditation of health promotion courses and registration of practitioners’.

Implementation of the European NCDs Plan of Action 2016-2025, requires strengthened public health training to develop Health Promotion capacities and services. The health sector requires staff to be trained in many specialities related to Health Promotion for NCD prevention, such as smoking cessation services and systems, early identification and brief advice programmes for the population at risk of hazardous or harmful alcohol consumption, reinforcing health systems to promote healthy diets and integrating physical activity into prevention, treatment and rehabilitation. IUHPE (2018) have also
recommended training and workforce development to prevent NCDs as investment in Health Promotion.

5.3.6.4. Actions for improving professional development
Oman needs to improve Health Promotion training in the areas of the four NCDs and their associated risk factors. It also needs to work on the collaboration between the MOH and other relevant sectors to develop Health Promotion professionals in other sectors to improve Health Promotion capacity for NCD prevention. Given the success of the CompHP project (Van den Broucke, 2017), Oman could ask the IUHPE for assistance, given the latter’s aim to support the capacity development to undertake Health Promotion activities through the training of individuals, organisations and countries with identified needs in this respect.

5.3.7. Integrated results for Domain 7: Information systems
The overall score for the stage of development of this domain was 3.28 (grade D ‘Under development’). This mean includes sub-domains with a C (i.e., the mechanism to track and report on behavioural risk factors for the control and prevention of NCDs) and an E (for the mechanism to track and report on chronic respiratory disease).

The Oman-CMHPI-NCDs-2017 grade D was the same as the WHO-EMRO (2010) score (D), suggesting little change in the information systems in Oman since the WHO-EMRO data collection in 2005. There was however an improvement from F (WHO-EMRO, 2010) to D (current study) in ‘the stage of development of the mechanism to track and report on social and environmental risk factors for control and prevention of NCDs at the national level’.

The grade D for information systems is the third lowest domain score in this Omani Health Promotion capacity map. The reason for this low score may be the absence of specific expertise within Health Promotion in statistics and research, or the lack of specific training focused on Health Promotion for the prevention of NCDs for staff in statistics and research departments.
5.3.7.1. Sub-domain 1: NCD information systems

Questions in this sub-domain asked about mechanisms to track and report on cardiovascular diseases, cancer, diabetes and chronic respiratory diseases all of which scored D. A ‘D’ grade is a fair grade since the interviewees noted that these mechanisms need to be improved by shifting from manual registry to electronic and by developing and upgrading the key indicators of NCDs and their risk factors.

5.3.7.2. Sub-domain 2: Risk Factor information systems

Questions in this sub-domain asked about the available mechanisms to track and report on behavioural risk factors for prevention of NCDs, including tobacco use, use of alcohol and use of illicit drugs, unhealthy diet and physical inactivity, all of which scored C. In this case a ‘C’ seems too high because there are no mechanisms other than the national Oman survey, which is conducted almost every eight years, and the indicators in this survey do not include behavioural risk factors such as rate of tobacco usage.

This was demonstrated in the qualitative study, ‘The MOH is doing frequent surveys, repeated surveys every let’s say seven/eight years or every ten years but these surveys did not cover health behavioural and lifestyle properly’ (see Table 95, 1.7.1), while another pointed out the ‘lack of data on health behaviours and lifestyle in past surveys’ (see Table 95, 1.7.1.1).

The qualitative findings reveal similar results to the quantitative survey. All of the interviewees indicated a big gap in the information systems for NCDs. One said, ‘there is a lack of information on specific issues (tobacco control, nutrition, diabetes)’ (see Table 96, 1.7.1.6), and ‘information and data are not available on various in-depth aspects of health behaviours which aid in developing Health Promotion strategies and activities’ (see Table 96, 1.7.1.2). One interviewee linked the lack of data to capacity, ‘lack of key performance indicators causing low health promotion capacity’ (see Table 96, 1.7.1.3), while others noted a lack of analysts and knowledge translation ‘low number of users of this type of data’ (see Table 96, 1.7.4), ‘lack of focus on statistics and research in Health Promotion’ (see Table 96, 1.7.1.5).
Omani surveys in 1991, 2000, 2008 and 2017 collected some NCD-related data, but there are no Health Promotion experts who can effectively utilise the survey data to develop briefs for policy decision and implementation. A further weakness in these surveys is that they do not provide a data for all three administrative levels of the country. Such a breakdown would be necessary to give a clear map of the Omani NCD situation.

WHO (2013) reported that there was no ‘available mechanism to track and report on activities at the national, regional (governorate) and provincial (wilayat) levels’ regarding behavioural risk factor tracking for alcohol, which suggests that this sub-domain has improved, as it is now graded C. This improvement may be because of an increased awareness of alcohol dependency, as indicated by the eighth five-year National Health Plan 2010-2015 (Directorate General of Health Planning, 2012) introducing a programme to reduce the incidence of substance (including alcohol) dependency and associated harmful consequences.

Due to the lack of supporting infrastructure for Health Promotion, and low Health Promotion capacity, there are no Health Promotion experts who can effectively utilise surveys and data. Most interviewees noted that the reason for the Health Promotion capacity gap in information systems was due to IT departments not being well developed in Oman. This means that manual health registration is used rather than electronic. One interviewee pointed out, ‘Until now we are using manual health registration in health institutions, which takes longer than using electronic systems’ (see Table 96, 1.7.4.1).

5.3.7.3. Sub-domain 3: Socioeconomic information systems

A mechanism to track and report on social and environmental risk factors for prevention and control of NCDs scored a grade ‘D’. A grade D reflects the lack of a system or survey that assesses these factors in Oman. Moreover, there is no Health Promotion research or Health Promotion indicators that are followed-up regularly on social and environmental factors in Oman.
5.3.7.4. Sub-domain 4: Health Promotion interventions information systems
Mechanisms to track and report on Health Promotion activities at the national, regional and provincial levels scored a grade ‘C’. A grade C for these mechanisms seems very high because there is no such mechanism in place. There is, however, a mechanism to track and report on health education activities at national, regional and provincial levels, and this may have caused some confusion in interpretation.

Health Promotion information systems are infrastructural aspects of the public health system. They yield data that are necessary for planning, monitoring and evaluation (WPR, 2005). Such information systems for public health are potentially crucial for Health Promotion aimed at preventing NCDs. Information systems from other sectors could also be valuable for the planning, monitoring and evaluation of Health Promotion programmes aimed at NCD prevention. These must be synchronised with the information systems within the health system, however, if their use is to be effective. Information systems are significant for policy development and Health Promotion programme evaluation with respect to NCD prevention (WPR, 2005; Mittelmark et al., 2006; McQueen, 2013).

5.3.7.5. Participants’ suggestions to improve the gaps in information systems
Participants suggested there was a need to design new electronic forms that enable collection of data about NCDs and their risk factors. One interviewee said, ‘we need to design new electronic forms’ (see Table 96, 1.7.4.1). Another noted:

‘The defect is in the IT departments and services which cause weakness in health promotion information systems even when the system is available, it has a lot of issues, and the system is slow. It’s incomplete and missing a lot of pieces. It is most of the time not friendly user’ (see Table 96, 1.7.3).

Some interviewees discussed the need for staff who can design and analyse such data and develop systems to translate the data into policy, ‘We need to develop a well-established Health Promotion information system to aid development of policies’ (see Table 95, 1.7.5). Further, one interviewee highlighted the need to move to online communication media:
‘Still we are lagging behind in using media like social media, which is very effective nowadays. Nobody has used it until now for health promotion unfortunately. The world is changing now, even the people of the world are changing towards these types like Twitter, WhatsApp, Snaps, and YouTube. We do need some like new ways to tackle all these things’ (see Table 96, 1.7.6).

5.3.7.6. Actions for improving Health Promotion information systems

Oman is expected to implement the UN commitments to tackle the NCD crisis and get engaged in the global monitoring framework for NCDs, which is likely to lead to more accountability. Action is necessary, however, in the form of: i) political commitment, ii) partnerships between sectors, iii) stronger health systems and iv) consistent measurement of progress. This Oman Health Promotion Capacity Map for NCD Prevention and Control can be used to formulate a plan to ensure the successful prevention and control of NCDs.

Numerous examples exist in other regions that could be adapted to Oman, including the WHO STEPS survey that is conducted periodically by the WHO to assess the NCDs and their risk factors. This is a framework for countries to monitor the main NCD risk factors through questionnaire assessment, along with physical and biochemical measurements (WHO, 2016). Relevant European examples include the European Health Examination Survey initiative and the WHO European Childhood Obesity Surveillance Initiative. The introduction of electronic health records could also help strengthen the quality of health management along the spectrum of prevention to care. Another example of an effective information system is that of the Pan American Health Organisation (PAHO, 2017) which, alongside data collection, organises technical collaboration between countries for the purpose of enhancing their analytical ability.

IUHPE (2018) recommends that governments need to invest in system supports to aid quality and accountability. This involves investment in research and evaluation so as to build a strong evidence base for NCD action. In Oman, this should be introduced across
the multiple sectors necessary for advancing population health. Further, there is a need for a training module on Health Promotion for the prevention of NCDs for the staff working in PHC, the NCD department, statisticians and other staff working in the Research Centre of the MOH and other relevant ministries.

Another recommended action would be to share knowledge and expertise about the information systems with other GCC countries, which have many similarities. This could be achieved, for example, by adopting the HP-Source.net capacity-mapping approach (Mittelmark et al., 2006) in the GCC area. The HP-Source.net literature from the European Commission explains the implementation of a universal European system aimed at gathering information concerning Health Promotion policies, infrastructures and practices, analysing databases and distributing the findings. Partnership between multiple sectors and the input of researchers, Health Promotion professionals, public health professionals and policymakers were necessary to accomplish this (Mittelmark et al., 2006).

5.3.8. Integrated results of Domain 8: Health Promotion financing

The overall mean for this domain’s stage of development is D (‘Under development’) (Score: 3.24). The grade D for Health Promotion financing is the second lowest domain score in the Health Promotion capacity map. It includes sub-domains that score C (e.g., a separate budget line for Health Promotion at the National, Regional (Governorate) or Provincial (Wilayat) government levels). The lowest grade is D (i.e., arrangements for funding of Health Promotion from dedicated taxes or levies on tobacco, alcohol, petrol or other products and services at the national, regional (Governorate) or provincial (Wilayat) government levels). The grade D for domain 8 achieved in this study is similar to the WHO-EMRO (2010) grade. This indicates that there has been no improvement in Health Promotion financing. The following sections discuss the results for the two Health Promotion financing sub-domains.
5.3.8.1. Sub-domain 1: Funding for Health Promotion activities

Available funding for Health Promotion activities scored a grade D. This sub-domain included questions about dedicated government funding for activities that improve health in Oman, having a separate budget line for Health Promotion at all levels within the country, the use of taxes or levies on tobacco, alcohol, petrol or other products, funding for surveillance, monitoring and evaluation of NCD prevention and funding for Health Promotion capacity building for NCD prevention and control. All of these scored a D grade. This reflects the survey results and clearly indicates a gap in Health Promotion capacity in Oman.

In general Oman is not doing well in funding Health Promotion or in surveillance and evaluation activity. The implementation of health-related taxes and levies in Oman has been lagging behind targets (Al-Lawati et al., 2017). These low grades are due to the absence of a specific budget for Health Promotion interventions for NCDs and a lack of strategic management of the MOH budget for Health Promotion interventions (DGP&S, 2014), as well as the low overall expenditure on health (as a proportion of GDP) compared with countries with good Health Promotion implementation. Oman therefore needs to increase the percentage of expenditure on the MOH from 6.4% to at least 10%, similar to European countries that have high standards of Health Promotion (Eurostat, 2016). Low health care expenditure leads to poor Health Promotion capacity. Another way to improve the financing is by reallocating resources for Health Promotion through the NCD multi-sectoral plan (DGP&S, 2018).

Consistent with the quantitative results, all of the interviewees stated that financing is a challenge in Oman and there is no Health Promotion financing. One interviewee said, ‘Financing is always an issue in many programmes’ (see Table 95, 1.8.1), another interviewee noted, ‘It’s not prioritised and allocated a budget, which also makes the financing issue a bit of an awkward issue in this country’ (see Table 95, 1.8.1). The MOH does not allocate a specific budget for specific programmes, rather, the funding is obtained from the general health fund as needed. The MOH and the government have
one common budget, which is not divided into specific budgets for surveillance or other components of NCD prevention. There is no system for prioritisation and allocation of budgets to the most needed areas. Thus, there is no specific arrangement for the funding of Health Promotion at the national, regional (governorate) or provincial (wilayat) level, and the only source of funding is the MOH government fund. One interviewee said:

‘But I mean that could be attributed to the fact that the ministry does not allocate a specific budget for specific programmes. It’s just, like, a big fund, and they tap into this fund as and when and if required. So, there is no predetermined money for every activity or programme in the ministry, and that’s the way the ministry has been working (see Table 96, 1.8.2.3).

A lack of understanding of Health Promotion reduces the chances of decision makers giving priority to financing this area of health care. There is a lack of monitoring and evaluation of Health Promotion in general, including a lack of monitoring and evaluation of Health Promotion financing. The current financial crisis arising from the reduction in oil prices is contributing significantly to the country’s financial constraints, and this has fed through to funding cuts for several Health Promotion programmes.

The Health Promotion funding strategy could potentially include the following: i) collecting specific taxes aimed at this, ii) a budget specifically dedicated to Health Promotion, iii) taxes levied on certain products (such as tobacco, alcohol and foods with a high sugar content), iv) national legislation for taxes, and v) new so-called ‘sin taxes’. The IUHPE (2018 p.9) stated that,

‘Ensuring adequate resourcing is essential. One way is to enact legislation that quarantines recurrent funding for the implementation of Health Promotion and NCD prevention - a five per cent minimum of overall health spending. This should include consideration of alternative sustainable financing options for Health Promotion funding such as levies on products that cause harm (tobacco, sugary drinks, alcohol and junk foods) with a dedicated allocation for Health Promotion, including Health Promotion research. A number of
countries have established Health Promotion funds through this mechanism, including Thailand with the Thai Health Promotion Foundation’ IUHPE (2018 p. 9)

The US (PAHO, 2017), the European countries (WHO, 2016) and South Korea (Lee, 2012) provide good examples of measures to fund Health Promotion, as well as of the benefits of providing a separate budget line for Health Promotion at their country level in improving interventions to control and prevent NCDs.

5.3.8.2. Sub-domain 2: Funding for prevention and control of NCDs
This sub-domain includes questions asked about the arrangements for the funding of Health Promotion at the national, regional (governorate) or provincial (wilayat) level which is from i) general government revenues, ii) health insurance, iii) international donors and iv) earmarked taxes on alcohol and tobacco.

In Oman, ringfencing is applied only to a few activities and harmful products such as tobacco (Al-Lawati et al., 2017), but not to fatty and sugary foods and alcohol (MOH, 2015) Thus, interviewees suggested ‘setting earmarking for any activities for health’ (see Table 96, 1.3.2.3). One interviewee highlighted the issue of tax allocations:

‘I think there is a lack of earmarking for some of the specific activities for health promotion. For example, the government of Oman collects 100% tax on tobacco sold in the market. And this tax increase will be hiked in 2018 to 200%. Yet we don’t see any earmarking for any activities for health promotion’ (see Table 96, 1.8.5).

These suggestions echo the WHO European NCD Action Plan 2016, which recommended that cost-effective interventions to promote better behavioural choices, earmarked, such tax income on tobacco and alcohol use, as well as the consumption of food could be used to finance public health programmes. They are also in line with the WHO/WPR 2005 Final Report’s recommendations which reported that new ‘sin taxes’ will provide funding for
programmes, such as funding for tobacco control programmes, provision of infrastructure for Health Promotion, development of Health Promotion strategies for national, provincial and local levels of government and provision of advocacy for Health Promotion (WPR, 2005).

In Oman, there is a need for the generation and allocation of financial resources to Health Promotion activities. A dedicated source of funding for Health Promotion could be found by raising taxes on tobacco, which currently has an extremely low level of domestic tax because none of the policies on the area of tax have been implemented (Al-Lawati et al., 2017). A good example of funding Health Promotion is South Korea, whose MOH expenditure on health is 15.4%, and the Health Promotion funding rate is 0.05%, and the €2,000,000,000 collected annually from tobacco levies is ring-fenced specifically for Health Promotion interventions (Lee, 2012). Another useful example is the European Union’s funding of Health Promotion activities for NCD prevention because securing a sufficient amount of public financing for NCD prevention is crucial for making progress. Actions could include: i) powerful instruments such as the WHO FCTC, ii) levying taxes to influence individual choices on tobacco and alcohol use, as well as the consumption of food, which is consistently seen as cost-effective, and iii) intervention through earmarked taxes to promote better behavioural choices, such as the use of tax income to finance public health programmes.

One challenge to furthering this approach was noted, ‘... internationally, the World Bank does not support the concept of earmarking, for example earmarking budget for tobacco control. And that aggravates the problem’ (see Table 96, 1.8.5).

5.3.8.3. Participants’ suggestions to improve the gaps in Health Promotion financing
Participants suggested having a separate budget line for Health Promotion, as well as developing efficient, effective and sustainable management of resources and funds. It was argued that organisations should have appropriate distribution of finances and funds; and that there should be a specially allocated budget for each programme in Oman.
The Ministry of Finance should acknowledge the importance of funding the control and prevention of NCDs, given that this will strengthen and improve the economy of Oman in the long-run. Effective and efficient management of the MOH budget is also needed. In addition, the MOH’s budget for its programmes and services should be given to those programmes and services that are most needed. In order to specify which programmes and services need resources, an effective strategic finance plan needs to be developed, and there is a need to have a section on financing or ways of financing in the multi-sectoral action plan. Overall, Oman needs to have a strategy for the prevention of NCDs with an appropriate financing system.

5.3.8.4. Actions to improve Health Promotion financing

As Al-Lawati et al. (2017) pointed out, a dedicated source of funding for Health Promotion could be found by raising taxes on tobacco, which currently has an extremely low level of domestic tax. A good example of funding health activities is the UAE where the health expenditure is €12,185,496, while in Oman health expenditure was only €1,789,32 in 2016 (Health Care Resource Guide, 2016). European countries also provide good examples on funding health activities. The French MOH expenditure is 11.5% (Eurostat, 2016) while in Oman MOH expenditure is only 6.4% (Oman Annual Statistics, 2016).

5.4. Strengths of Oman Capacity Mapping of Health Promotion Interventions for NCDs

In the following section the strengths of the whole study will be mentioned and the strengths of the of the Oman new tool. The limitations of the study are discussed, including how to handle missing data.

5.4.1. Strengths of the study

This is the first study in the area of Health Promotion capacity-mapping to:

i. Develop a tool for capacity-mapping of Health Promotion capacity interventions for NCDs. This is a strength of this research because there are no previous tools developed in the area of capacity and Health Promotion interventions for NCDs and this tool could be used in many other countries concerned specifically with NCDs.
ii. Develop a template for an Omani Health Promotion capacity map of interventions for NCDs. This is a strength of this research because this is the first study which has used template analysis in the analysis and evaluation of the qualitative data during a capacity mapping exercise. Template analysis is an analysis tool that is very effective for use in the management and evaluation of health services and could be appropriately applied to other settings.

iii. Apply a mixed-method explanatory sequential study. This is a strength of this research because the quantitative study was complemented by a qualitative study. The qualitative study here helped to explain the results of the quantitative study and acted to validate almost all of the survey. The interview data also provided context and detail that would not have been feasible to collect via a quantitative survey, thus the two combined act to give a more holistic picture that is ready for knowledge translation activity.

iv. Use face-to-face semi-structured interviews with key policymakers and leaders who have the power to implement Health Promotion, rather than hard copy questionnaire (EMRO, 2010; Western Pacific, 2005; IUHPE, 2011) or telephone interviews (Mahmood & Barry, 2014). Face-to-face semi-structured interviews were most appropriate for application in this study for many reasons, such as to show the participants clearly the results of the map and to get as much as possible information about their perception about the map results and the gaps and thus their recommendations for steps the Omani government needs to take to improve health promotion capacity for the prevention of NCDs in Oman. This is a particular strength of this study as the commitment and ‘buy-in’ of the interviewees will be important for the implementation of study recommendations in Oman.

v. Involve representatives of multiple sectors in Oman. This is a strength of this research as it is one of the rare studies to reach out to the government, NGOs and the private sector to get their input into NCD prevention, to raise their awareness about
the problem and to show how they can collaborate to prevent NCDs, especially in the area of improving the social determinants of health.

5.4.2. Strengths of the new tool for Oman for NCDs prevention

The new tool for Oman is an appropriate tool for mapping Health Promotion capacity for NCDs for the following reasons:

i. The comprehensive literature review revealed that this is the first tool for Health Promotion capacity-mapping specifically developed for NCD prevention

ii. Use of SurveyMonkey enabled a web-based consultation with a large number of informants that were geographically dispersed in Oman

iii. The tool is focused specifically on the eight domains of Health Promotion mapping capacity for NCD prevention

iv. The tool is based on Catford’s approach of describing the capacity areas in terms of domains and sub-domains

vi. Piloting the tool served to increase validity, reliability and applicability, as discussed in the method section 3.2.1.4.

vii. This is the first time a Health Promotion capacity tool has been translated into the language of its users, essential to access ‘hidden’ knowledge.

viii. The tool can be used for future research as it can be used as a basis for mapping Health Promotion capacity in high-, middle- and low-income countries.

5.4.3. Limitations of the study

5.4.3.1. Large amount of missing data in phase two

In phase two, the number of respondents not answering individual questions ranged from 10 to 258 (258 was the missing score for the first question in both Domains 3 and 4). The lower rates of missing values (10-52) were for demographics questions, which are easier
to answer. The missing data started to increase in the Health Promotion-related questions.

One possible reason for the reduced response rate for the Health Promotion questions is that the participants found the Health Promotion questions difficult to answer and/or were fatigued. In this survey, a number of participants in the pilot study and some of the policymakers who completed the interviews reported that it was difficult to answer the survey questions and that the level of the questions was very high. The author received a number of calls and emails from participants saying that the survey was difficult to answer. It is possible that these participants could not answer because the concept of Health Promotion is not fully understood by policymakers and even some public health experts.

A second reason is that participants found some questions abstract and difficult to apply to the Omani situation. This difficulty in understanding the questions was also observed by Nam & Engelhardt (2007), who explained that programme delivery questions are difficult because it is often unclear what programmes or activities are considered to be health promoting.

A third possible reason for the low response rates, which became evident during this mapping exercise, is that the multiple understandings of Health Promotion terminology and the complex nature of Health Promotion render it challenging, especially in non-native English-speaking countries (Ebbesen et al., 2004, Nam & Engelhardt, 2007).

A fourth reason for low response is that it may have been difficult to understand the multiple-choice response options provided for the questions. In the pilot, some respondents preferred to use ‘yes/no’ response options. It is possible that respondents did not understand these stages because the stage development level terminology is planning and management terminology and not Health Promotion terminology. This failure to understand stages of development was also reported by Nam & Engelhardt (2007).
5.4.3.1.1. How large missing data were dealt with
A high level of missing data was also observed in the pilot study, as mentioned above. The response there was to simplify the questions and change the language to be more understandable and easier to answer. This is described in section (3.2.1.4 and 3.2.1.5). Nevertheless, and as reported above, there were still high levels of missing data in the main study. The section below considers the most appropriate ways to respond to this challenge.

5.4.3.1.2. Review of the literature around how to handle low response rates
A general recommendation to handle missing data is that researchers fully consider and report the extent of missing data and the strategy adopted for handling those data (Schlomer, Bauman & Card, 2010). Data can be missing by design (e.g., only a subset of respondents are asked a subset of survey items) or through some other process related to respondents or survey features which are called unintentional nonresponse. Hardy and Bryman (2009, p. 114) define the term ‘missing-data mechanism’ as ‘the process by which the data become incomplete’. Two commonly used mechanisms are missing completely at random (MCAR) and missing at random (MAR); the result of a random process or a non-random process, respectively.

There are three methods for handling missing data. The first is the ad hoc method in which the analysis is completed based on complete data only or input of (filling in) the missing data. The advantage of ad hoc methods is that they are easy to use, while a disadvantage is that they can lead to biased and inefficient estimates. The simplest form of mean imputation is to replace the missing value with the mean of the other observed values (Hardy & Bryman, 2009). This will lead to an under-estimate of the element variance ($\sigma^2$) of the imputed variable, however. In some cases, it does matter what approach to imputation is used. For example, according to Jans, Heeringa and Charest (2008), when survey data are missing at the item level (i.e., individual respondents have not reported values on a subset of items in the survey protocol), an analyst is faced with the decision of whether or not to impute values for those that are missing. Another more
complex method of handling missing data is a likelihood-based method; applying an algorithm inference based on maximum likelihood is popular and unbiased. A third approach is the use of simulation-based methods such as multiple imputation and data augmentation. Finally, from recent literature of how to handle missing data by Hung et al. (2020) there are four ways as follows: i) Exclusion ii) Imputation, iii) Interpolation and iv) Verification account in modelling method.

In this research, it is assumed that people that answered ‘don’t know’, or who simply did not answer the questions actually did not know the answer, and therefore it is good that they did not answer. Because it is difficult to be familiar with all areas of Health Promotion in Oman, it was difficult to get complete data from any respondent and instead the value of this survey is from gathering partial information from different respondents to build an overall map of capacity. In other words, it was not assumed that missing responses of each respondent do not mean that the data quality is compromised. It was assumed that those people who did not answer and did not respond with ‘don’t know’ did not do so because they were embarrassed to show they did not know. It was also assumed that everyone who did respond to a question had some useful information to contribute. Therefore, none of the methods outlined above were used for dealing with missing data. As a result, each statistic (mean or %) that is estimated is based on a different valid sample. Finally, because this project does not include any bivariate analyses, it is not imperative to have complete data for any participant.

One issue that arises is the possibility of the original sample being too widely drawn, thus including people that did not have anything useful to contribute to the research, either because of lack of expertise or lack of interest. To provide a picture of this, it was decided to conduct an analysis comparing the socio-demographic characteristics of those who responded more fully with those participants who returned questionnaires with many (i.e., >50%) missing data. The findings from this analysis can be found in Figure 10. Other comparisons of the data returns from the full sample and the reduced sample (those that responded to a high number of items) were presented in section 4.1.5.10 of chapter 4.
5.4.3.2. Other limitations of this study

The phase two quantitative survey was disseminated online for a limited time (one month). The researcher obtained the participants’ email addresses from the planning department, WHO and Oman Public Health association. Most of the initial email addresses were incorrect, however, and it cannot be known what impact this had on the data collected. In phase three, interviewing political leaders in the government was a challenge, since the researcher only had one month in Oman to conduct the interviews. The socioeconomic questions were not included in the interviews because of time constraints, and the focus was on the Health Promotion capacity for NCDs and their risk factors.

5.5. Impact of Capacity-mapping for Public Health and Health Promotion

5.5.1. The relationship between capacity-mapping and performance

Mapping capacity provides a dynamic starting point for the analysis of the existing strengths and weaknesses in the Health Promotion capacity. Specifically, the results help to point out some of the gaps that need to be addressed to improve public health performance. Capacity is not in itself a measure of performance, however. According to Aluttis et al. (2014, p. 38):

‘Notably, such a capacity mapping process does not provide answers about the performance of a system; it merely contains an evaluation of the system’s ability to fulfil its specific functions within a set of given resource constraints. Whether the specific objectives of a health system are ultimately achieved needs to be left to conventional health system performance assessments’.

According to WPR (2009), ‘capacity = the performance capabilities to deliver Health Promotion outcomes’. Mapping the Health Promotion capacity alone will not improve the performance at the health system level. To improve the performance of the health system, there is a need to enable delivery of particular services, performance standards, and quality improvement, solve new problems and improve workforce development, organisational development, and leadership development (WPR, 2009).
The impact of capacity-mapping on the performance of the health system and the public health services cannot be known unless further strategic action is undertaken, because the relationship between the capacity-mapping and the performance of the health system is not direct. Improving performance depends on how the results of the capacity-mapping are used. In addition, having good capacity does not necessarily mean good performance. This is consistent with Mittelmark et al. (2006, p. 92), ‘Having the capacity to perform a task is an essential but not sufficient condition for good performance’. This is because good performance will be achieved when this capacity is strategically planned to overcome the gaps in the health system, even within the context of resource constraints. Having a map of the capacity in any country does not directly improve the health system unless a plan is strategically designed either to build capacities that are not there or further develop capacities that are already there but in need of upgrading and development.

A capacity map will therefore lead to the improvement of the health system, Health Promotion and public health services only when further strategies build on the evidence from the map about what really needs to be built or developed. According to Aluttis et al. (2014), there is a shift to influence the health of the population through enabling systems and networks to conduct public health actions in a self-determined and sustainable manner. Developing the capacity of a system will prolong and multiply health effects many times over by strategically planning to achieve the health outcomes that are being prioritised.

The benefits of mapping Health Promotion capacity therefore become most apparent when the mapping is used to help with forward planning (Battel-Kirk & Barry, 2011). Mapping is used as essential information to establish baseline capacity and inform strategic planning to address gaps, and finally, for measuring the impact of capacity-building interventions over time (Battel-Kirk & Barry, 2011). It can also be used as a cost-effective tool to help prioritise Health Promotion interventions, which, in the long-term, will serve to improve health (Gaudin et al., 2019).
Health Promotion capacity mapping will not directly improve the health system and public health unless the Health Promotion capacity is strategically directed to where it is mostly needed. Figure 12 below shows the possible impact of mapping the Health Promotion capacity on the improvement of the health system, determinants of health, and population health.

Health Promotion capacity-mapping has been used by WHO and other agencies to provide a baseline measure or, in some cases, a benchmark against which improvements in capacity can be planned. Mapping can only improve the health system and public health if the leaders and policymakers use recommendations resulting from the map to strengthen system capacity (Bagley & Lin, 2009). Catford (2005) considered the Health Promotion capacity tool as a ‘policy tool for national capacity stocktaking to be straightforward in presentation and communication’. LaFond et al. (2002) argued that assessing capacity is a first step in efforts to improve capacity. Mapping capacity does not directly improve the health system or public health capacity, but the idea is for countries to develop assessment tools to further proceed and intervene according to the needs of the country with regard to strengthening their public health capacity.

Health Promotion capacity mapping will lead the way for further strategic planning and implementation of interventions according to the evidence shown in the map to overcome the gap areas by building capacities that will improve these gap areas. The impact will be improvements in the health system, the determinants of health and, ultimately, the population health. Figure 12 below illustrates the (potential) impact of mapping the Health Promotion capacity.
Health promotion capacity mapping

Further Strategic Planning and implementation of interventions to overcome the gap areas in the capacity and to develop more Health Promotion capacities in:

- policy and plans, determinants of health, infrastructure and core of expertise, collaboration, programme delivery, partnerships, professional development, information systems, resources and health promotion financing

Improve Health Promotion capacity

1. Improve Health system  
2. Determinants of health  
3. Population health

Figure 12. Impact of mapping the Health Promotion capacity

5.5.2. Impact of Health Promotion capacity-mapping

Capacity-mapping has been shown in previous studies to have an impact on policy-making (e.g., Mittelmark et al., 2006; Catford, 2005; WPR, 2005; Nam & Engelhardt, 2007; Aluttis et al., 2014; WHO, 2018d), which may in turn impact capacity development and the performance of the health system.

According to Mittelmark et al. (2006), the WHO capacity-mapping initiative began in 2005 to synthesise key social and economic evidence-based indicators in twenty countries across four sub-regions of Europe. The aim was to map the current capacity of Health Promotion systems, with particular emphasis on responsiveness to the broader determinants of health and to highlight the implications for Health Promotion policy and infrastructure development. HP-Source.net ‘The Health Promotion Discovery Tool’ is a comprehensive database of Health Promotion policies, infrastructures and practices (WHO, 2005). This Health Promotion capacity map developed a uniform system for collecting information on Health Promotion policies, infrastructures and practices, as well as creating databases and ensuring that policymakers, international public health
organisations and researchers can: i) access information at inter-country, country and intra-country level, ii) analyse the databases to support the generation of models for optimum effectiveness and efficiency of Health Promotion policy, infrastructure and practice; and iii) actively impart this information and knowledge, and actively advocating for the adoption of models of proven effectiveness and efficiency, through publications, seminars, conferences and briefings, among other means.

The Western Pacific Region National Health Promotion capacity-mapping (WPR, 2005) was undertaken across seventeen WPR countries in 2005. The WPR map pointed to the weaknesses in Health Promotion financing and workforce in most countries in the region. The mapping exercise also pointed to the value and importance of engaging key stakeholders in the process of capacity assessments to reflect the current status of national Health Promotion infrastructure and capacity. A dialogue-based tool was developed to generate a framework and a process for thinking about shortfalls in system capacity. This enabled stakeholders to undertake a rapid assessment of the system and to arrive at some consensus about shortfalls and, therefore, investment priorities. The recommendations arising from the WPR map (WPR, 2005; Lin et al., 2009) were to take action to strengthen Health Promotion infrastructure, continue to map national Health Promotion capacity regularly as a routine process for quality improvement, and support the development of high-performing Health Promotion systems.

Mapping Health Promotion capacity with the WHO-EMRO-2010 tool was conducted by collecting data from twenty-two countries in the WHO-EMRO region. The map was used as a collective approach to assess existing capacity in Health Promotion planning, programme implementation, financing and cross-sectoral collaboration. The results of the WHO-EMRO-2010 tool for Oman were one B in policy and planning and one C in the collaborative mechanism, a low health promotion capacity at the level D in four domains, the core of expertise, the professional development, information systems and financing, and lower, at level E, in programme delivery and partnerships.
Health Promotion capacity-mapping in Korea, according to Nam & Engelhardt (2007), was undertaken using two international capacity-mapping tools to assess the Korean situation, namely HP-Source and the HPCP based on Catford’s (2005) framework. This mapping process was used to assess the strengths and weaknesses of Korea’s Health Promotion capacity. Implications of the weaknesses were to develop policy, to develop national health plans, to monitor surveys and research, to increase professional education in Health Promotion and professional associations and to implement Health Promotion activities, policies and plans (Nam & Engelhardt, 2007).

The elements necessary for a public health system to function constitute what is called public health capacities, also referred to in the English-language literature as ‘Public Health Infrastructure’ (PHI). PHI is defined by the CDC as the ‘underlying foundation that supports the planning, delivery, and evaluation of all public health activities and practices’ (CDC, 2001 p.1), while Turock (2009, p.74, describe it as ‘the systems, competencies, relationships and resources that enable performance of public health’s core functions and essential services in every community’.

Unfortunately, according to the researcher’s knowledge, up until now, there is no literature follow up on capacity-mapping impacts in any country. Even though many authors (Milen, 2001; LaFond et al., 2002; LaFond & Brown, 2003; Beaglehole & Dal Poz, 2003; Catford, 2005; WPR, 2005; Mittelmark et al., 2006; Bagley & Lin, 2009; WHO-EMRO-2010; Battel-Kirk & Barry, 2011; Aluttis et al., 2014) has theoretically asserted that there would be improvement after strategic action. No evidence-based results of the impact of capacity-mapping were identified.

Although there is no literature showing the direct impact of mapping capacity in any country, we can still see that there has been an improvement in the health system and the public health in most of the countries that have mapped their public health and Health Promotion capacity (Mittelmark et al., 2006; WPR, 2005; Nam & Engelhardt, 2007; Aluttis et al., 2014). Such improvement can be seen in the ‘Health Promotion leap’ in Europe after using the HP.net ‘Health Promotion discovery tool’ to assess the Health
Promotion capacity among European nations. This success is shown in the improvement of the health of the European nations (e.g., reduction in deaths from NCDs) (WHO, 2014, 2016, 2018; Martin-Moreno, 2014, 2018, Puska et al., 2009, 2018, IUHPE, 2018, Marmot & Bell, 2019). The WPR has improved their Health Promotion levels, indicated in reduced NCD-related deaths (WHO, 2018) and South Korea has become one of the models of successful Health Promotion policy and practices (Lee, 2012). The WHO-EMRO region has also improved its Health Promotion levels, but not to the same extent. While there have been more health education and community development initiatives, this region has not considerably improved in its Health Promotion policy practices, strategic planning for Health Promotion activities, knowledge, workforce and financing (EMRO, 2010; Martin-Moreno, 2014; Abdul Rahim et al., 2014; Al-Lawati et al., 2017; Sheikh et al., 2019).

5.5.3. Implications for Oman

At the government level, this research provides suggestions to the Omani Government to reallocate budgets to improve Health Promotion capacity for control and prevention of NCDs. At the policy level, this capacity-mapping study reveals strengths and weaknesses (gaps) in Health Promotion capacity and will help policymakers formulate policies to address these gap areas. This information will also help in reallocating resources to where they are most needed. For Oman’s Health Promotion and public health sectors, this research recommends the implementation of Health Promotion services in a strategic manner according to the eight domains. For health planning, this research provides suggestions to help plan and design strategies and programmes that effectively tackle NCDs and their risk factors. For academia, the findings from this research and the developed tool can contribute to research on Health Promotion capacity-mapping for the prevention of NCDs in GCC and other countries suffering from NCD-related high mortality, morbidity and disability. For health workers, the research provides a basis from which to develop more Health Promotion programmes and activities that tackle NCDs and their risk factors, to improve individual literacy about NCDs and their risk factors, and to empower the community to participate in the battle against NCDs and their risk factors. For other sectors, the results help to develop more Health Promotion programmes and
activities that tackle NCDs and their risk factors at the social determinants of health levels, to improve individual quality of life and to participate to prevent NCDs and finance all the health promotion interventions. For health service delivery and practitioners, the study enables the delivery of Health Promotion interventions to prevent NCDs. For educators, it enables the provision of programmes and activities that improve the awareness of students and the community about NCDs and their risk factors. Finally, this research enables researchers, i) to carry out the exercise of the mapping Health Promotion capacity on a regular basis, ii) to update and upgrade the methods and process of the study, particularly to improve the questionnaire to support professional development and training in health promotion, and iii) to advocate for Health Promotion capacity actively through publications, seminars, conferences and briefings, among others.

5.6. General recommendations and suggestions

General recommendations are given here to the government sectors that have the power to improve the health promotion capacity for the prevention of NCDs in Oman. A key target in this regard is the Council of Ministers, which can adopt the plan of action for Health Promotion capacity for NCDs and allocate financial resources to implement the health promotion plan, as well as establish an institution for Health Promotion and provide financial support for this. The MOH has a big responsibility to involve other sectors in the implementation of the plan of action to prevent NCDs, show each partner their role in the plan and develop a framework for monitoring and evaluating the plan to ensure that it is implemented in a timely fashion. One recommendation to the Ministry of Education is to integrate Health Promotion into the curriculum of schools and colleges in Oman. Another important recommendation is to develop collaboration between all sectors under a plan of action, so as both to avoid the duplication of activities and ensure that activities are not missed. Finally, there is a need to establish and support the infrastructure for Health Promotion in each sector and prioritise the development of Health Promotion human resources.
5.6.1. **Recommendations to the government**

- Enhance Health Promotion capacity for the prevention of NCDs through a strategic partnership plan, which needs to be implemented and evaluated by a higher entity in the government.

- Improve the social determinants of health, particularly the access to a clean and safe environment, at the national, regional and provincial levels as the participants in this study request. This can be achieved through effective partnership between all sectors, which will lead to socioeconomic environmental development in Oman.

- Oman needs to develop leadership for Health Promotion in the form of a Department for Health Promotion which will control and prevent NCDs.

- Health Promotion policies in Oman should be reviewed, edited and formulated under the Health Promotion Department, taking account of the determinants of health and social determinants of health policies.

- Develop standalone Omani Health Promotion policies.

- Develop manpower for Health Promotion and train this human resource at the master and doctoral levels by asking the IUHPE for assistance.

- Develop a specific training module on Health Promotion suitable for the multiple sectors that are involved in Health Promotion in Oman.

- Develop a governmental health information system that periodically collects and reports on Health Promotion capacity interventions for the prevention of NCDs and socioeconomic determinants of health interventions for the prevention of NCDs.

- Develop annual governmental reports/publications on the Health Promotion capacity interventions for the prevention of NCDs.

- Develop an annual strategic management plan as a part of the Health Promotion budget that involves both the generation and the allocation of a specific budget for Health Promotion activities, and interventions for the prevention of NCDs and other Health Promotion issues.
5.6.2. Recommendations for the MOH

- To enhance the Health Promotion capacity for the prevention of NCDs.
- To develop a Department of Health Promotion for the prevention of NCDs, or a unit under the NCD Department that can manage Health Promotion programmes related to NCDs and their risk factors.
- To develop a training module on Health Promotion for use in PHC.
- To develop a training module on Health Promotion for statisticians and the staff working in the research centre of the MOH.
- To develop a training module on Health Promotion for policymakers and managers in the health sector and all those who work in Health Promotion activities in Oman.
- To train staff in Health Promotion at the masters and doctoral levels to lead the future development of Health Promotion in Oman.
- To train policymakers in the MOH and other involved sectors to understand Health Promotion, NCDs, social determinants of health and Health Promotion capacity for the prevention of NCDs.
- To carry out more research in the social determinants of Health Promotion for the prevention of NCDs.
- To incorporate teaching on Health Promotion for the prevention of NCDs and the social determinants of health into the curricula of health and medical personnel.
- To reorient health services from demand-led health care to preventive health care by strengthening Health Promotion capacity for all NCDs and at all the levels.
- To improve information and research on Health Promotion capacity for the prevention of NCDs to guide actions based on the effectiveness of interventions and policies.
- To enhance impact assessments for Health Promotion capacity for the prevention of NCDs.
5.6.3. Recommendations for other sectors involved in NCD prevention

- Collaborate with the MOH for implementing Health Promotion activities, interventions and strategies.
- Achieve Health Promotion indicators within their sectors (e.g., Ministry of Education to achieve 100% primary education in Oman, Ministry of Social Development to reduce poverty and ensure a high-quality living for Omani citizens, Ministry of Manpower to ensure unemployment is at a low level in Oman)
- Train staff in Health Promotion at the master’s and doctoral levels.
- Provide a budget to achieve the Health Promotion action plan and Health Promotion interventions among multi-sectors.

5.6.4. Recommendations for future research

- To conduct more research on capacities that aim to build and develop Health Promotion capacity for the prevention of NCDs using advanced tool in the future such as Aluttis et al.’s (2014) framework and instrument.
- To conduct the mapping exercise with respect to Health Promotion at least every five years.
- To conduct further Health Promotion capacity-mapping studies with larger quantitative and qualitative samples.
- To include questions on in-service/in-practice training or continuous professional development in Health Promotion for those already trained in related fields within future tools on Health Promotion capacity-mapping.
- To involve other sectors, key policymakers and leaders in the government in research, particularly in qualitative research.
- To add Primary Health Care settings as an important Health Promotion setting and include more questions about the interventions and activities related to Primary Health Care in future data collection tools.
- To include more socioeconomic questions to assess the social determinants of health in the qualitative interviews.
5.7. Conclusion

In conclusion, the current research added to the conceptual developments or theory for the future understanding of health promotion, the role of capacity, capacity mapping and how we can conceptualise capacity within Health Promotion. The research added to the understanding of the conceptual developments or theory of health promotion as a comprehensive strategy that serves to improve not only health services but also the social determinants of health, quality of life and overall population health and wellbeing. Mainstreaming of health promotion can ensure an holistic and empowering approach, emphasising equity, social justice and participation, The research also added to the understanding of the role and the importance of health promotion capacity-mapping in determining which health promotion capacity should be develop to prevent NCDs. The research added to the understanding of the conceptual developments or theory on how we conceptualise capacity within Health Promotion. This is because health promotion activities and interventions need to be planned from an evidence base of data so as to determine which health promotion capacities are needed to improve health services. Most important, this research showed the strategies that can strengthen NCDs capacities through health promotion lens.

The present findings of both the second and third phases confirmed that the study successfully achieved the study objectives. The research answered the overall research question for this research, ‘What is the Health Promotion capacity for preventing non-communicable diseases in Oman?’ by achieving the objectives as follows:

I. To examine the level of Health Promotion knowledge, skills, commitment, systems, structures and leadership that exist in Oman to determine interventions that promote health (including policies and organisational and community-level strategies) and that are integrated into the existing structures for preventing NCDs in Oman.

II. To determine gaps where further Health Promotion capacity is required to prevent and control NCDs in Oman.
III. To identify recommendations for strengthening existing government support for Health Promotion capacity directed at preventing and controlling NCDs.

The first and second objectives were achieved in the quantitative study through examining the eight domains (Catford, 2005) of Health Promotion capacity for NCDs. It was found that these achieved an overall average score of C ‘Actioned’, which means that work has started but that is too early to assess impact or outputs at the national level and there has been no evaluation and monitoring evidence up to date (Catford, 2005).

The quantitative results for the eight domains revealed one low B grade ‘Partially implemented’ in the Core of Expertise capacity domain and C grade ‘Actioned’ in four domains (policies and plans, collaboration, partnership and professional development). D grade ‘Under development’ means that there has been a commitment on the national level to implement the activity, and that work is under way to develop it in the three domains of Programme Delivery, Information Systems and Health Promotion Financing. The lowest scoring domain was programme delivery (2.75).

The second objective was achieved by identifying that further Health Promotion capacity is required for the three domains of Programme Delivery, Information Systems and Health Promotion Financing. The quantitative study indicates that Oman needs to improve all capacity domains, particularly the low-scoring domains of programme delivery, information systems and financing.

The existing Health Promotion capacity in Oman, and the progress in respect to Health Promotion infrastructure, indicates that, although there is commitment among policymakers, there is insufficient implementation of effective Health Promotion policies and strategies to control and prevent NCDs. High-level government support is required to improve the Health Promotion capacity for the prevention of NCDs. The questionnaire developed here could be further used as a basis for a Health Promotion development strategy for the prevention of NCDs.
In the qualitative study, the second and third objectives were successfully achieved, with participants providing solutions to overcome gaps in each domain, and especially with respect to the three lowest scoring domains mentioned above. The qualitative interviews were analysed by template thematic analysis, which presents the findings in a template format (see Appendix H the initial template and final template analysis in tables 96,67,98). The template thematic analysis of the interviews was presented in three themes as follows: i) domains of the Health Promotion capacity for the prevention of NCDs in Oman, ii) general perceptions about Health Promotion capacity-mapping for NCDs in Oman, and iii) recommendations to the government for improving the Health Promotion capacity in Oman.

The phase three interviewees gave sixteen recommendations for strengthening existing government support for Health Promotion capacity directed at preventing and controlling NCDs. These recommendations were as follows: i) adopt the plan of action by the Council of Ministers, ii) allocate financial resources to the plan of action, iii) involve other sectors in the implementation, iv) have a higher body oversee the implementation of the plan of action, v) have a framework for monitoring and evaluation, vi) formulate an independent authority to prevent and control NCDs, vii) formulate an institution for public health or for Health Promotion, viii) the higher committee of NCDs should be represented by a higher level of authorities, ix) recognise the need for more collaboration between all the organisations to avoid duplication and the potential to miss key activities or target groups, x) concentrate on developing our human resources, xi) to establish a department for Health Promotion and support it, xii) provide financial support for the established Health Promotion department, xiii) recognise that policies and plans of action for Health Promotion for NCD have to come from a higher government entity; either from the supreme council, from the ministerial council or even higher, xiv) allow relevant sectors to focus their resources and their capacity to do something, xv) provide a government mandate to the other sectors to build their Health Promotion capacity to prevent NCDs, and xvi) deliver a high level of Government commitment. It is important to note that most of the phase three interviewees suggested that there should be a plan of
action for Health Promotion for the prevention of NCDs in Oman to be overseen by a high body in the government (e.g., the Council of Ministers) and that there should be government-mandated or obligatory multi-sectoral partnerships between sectors.

In the light of the results presented and explained above, the participants’ suggestions reveal that Oman needs to develop effective strategic partnerships and collaboration between government, NGOs, the private sector and civil society, since this will enable the development and implementation of Health Promotion policies and plans, the establishment and strengthening of Health Promotion infrastructure and the core of expertise and leadership for the prevention of NCDs. This will lead to improvements in the three lowest scoring domains of programme delivery, information systems and financing.

The overall conclusion of this research is that Health Promotion interventions for the prevention of NCDs should not reside exclusively within the MOH but should be expanded to other sectors that are involved in Health Promotion and the prevention of NCDs. Building Health Promotion capacity for the prevention of NCDs is everyone’s business and not only the business of the MOH. Other relevant sectors should therefore be obliged to participate in the process of developing Health Promotion capacity for preventing NCDs in Oman.
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Retrieved July 2020 from: [https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases](https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases)


APPENDIX A: A Scopus Systematic Search Syntax

The following search strategy was used in Scopus to obtain the literature for the literature review.

( TITLE ("Capacity" OR "Infrastructure" OR "Interventions" OR "Programmes" OR "Programmes" OR "Resources") OR TITLE ("Capacity mapping" OR "Capacity Road mapping" OR "Capacity map") AND TITLE ("Tool" OR "Assessment" OR "Evaluation" OR "Indicator" OR "Questionnaire" OR "Framework") AND TITLE ("Health Promotion" OR "Public Health") OR ("Non-communicable diseases" OR "Non-communicable disease" OR "Non-communicable diseases" OR "Non-communicable disease" OR "NCDS" OR "NCDs" OR "Chronic disease" OR "Chronic diseases") AND NOT TITLE ("Medical treatment" OR "Clinical Treatment") ) AND ( LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012) OR LIMIT-TO (PUBYEAR, 2011) OR LIMIT-TO (PUBYEAR, 2010) OR LIMIT-TO (PUBYEAR, 2009) OR LIMIT-TO (PUBYEAR, 2008) OR LIMIT-TO (PUBYEAR, 2007) OR LIMIT-TO (PUBYEAR, 2006) OR LIMIT-TO (PUBYEAR, 2005) OR LIMIT-TO (PUBYEAR, 2004) OR LIMIT-TO (PUBYEAR, 2003) OR LIMIT-TO (PUBYEAR, 2002) OR LIMIT-TO (PUBYEAR, 2001) OR LIMIT-TO (PUBYEAR, 2000) ) AND ( LIMIT-TO (LANGUAGE, "English") )
APPENDIX B: Survey Monkey Questionnaire English

INTRODUCTION

This study aims to map the capacity for promoting health in Oman.

This questionnaire is part of a study for a Doctor of Philosophy degree carried out by the researcher Dr. Hiyam AL Riyami and supervised by Dr. Lisa Pursell and Dr. Saoirse Nic Gabhainn at the National University of Ireland, Galway, Ireland. This questionnaire is for all people who are working in any activities that promote health in Oman. This may include people working in the Ministry of Health, but also people working in any other sectors related to improving health. Health is everybody's business.

Thank you for your help!

BACKGROUND AND OVERALL AIM OF THE STUDY

‘Health Vision 2050’ is Oman’s effort to visualise how the Omani health system should be up to the year 2050. In the process of reviewing the existing health system, national and international experts, as well as the public, have highlighted that ‘Health promotion is of extreme importance’ (Sultanate of Oman, 2014).

This concern is reflected in the Oman Vision 2050 Synopsis of Strategic Studies (2015), where one of the chapters focuses on health promotion. Objective number eight is to monitor and evaluate health promotion initiatives, services and policies in Oman. Little is currently known about initiatives that promote health and the overall health promotion capacity in Oman, however.

Consistent with Objective eight, the aim of this survey is to examine Oman’s capacity in respect to health promotion (with a focus on non-communicable disease).
The main focus of this questionnaire is to examine the level of health promotion knowledge, skills, commitment, system, structure and leadership that exist for promoting interventions (including policies, organisational and community level strategies), which are integrated into the existing structures for Health Promotion in Oman.

**ANONYMITY, CONFIDENTIALITY, SECURITY AND ETHICAL APPROVAL**

No specific names or personal information will be recorded, and other information such as the IP address will be blocked. The completed questionnaire will only be accessed by the researchers, and files will be stored in encrypted format on a password-protected computer.

This questionnaire is approved by the Research Ethics Committee at the National University of Ireland (353) 91 495312, email: ethics@nuigalway.ie, Galway and by the Oman Research and Ethical Review & Approval Committee (968) 24 697551, email: mohrerac@gmail.com.

**INSTRUCTIONS**

Please read carefully the questions and possible answer choices (see ‘Stages of Development answer choices’) before you start to answer any question. It is expected that everyone in areas of work involved in promoting health should be able to answer some of the questions in this questionnaire. Everybody has specific areas of knowledge and expertise depending on their area of work, however; hence there is no need to worry if you do not know answers to some, or even many, of the questions. If you do not know an answer to a question, please choose ‘Don’t know’.

Your participation in this questionnaire is completely voluntary and you may withdraw at any time. The questionnaire should take less than 45 minutes to complete.

Thank you for taking the time to respond to this questionnaire.
If you have any queries or concerns please contact the researcher: Dr. Hiyam AL Riyami. Department of Health Promotion.

School of Health Science, National University of Ireland Galway.

Email: h.al riyami1@nuigalway.ie.
### Health promotion capacity mapping tool for prevention of NCDs in Oman

<table>
<thead>
<tr>
<th>Questions</th>
<th>Answers Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic details of the participants</td>
<td></td>
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<tr>
<td>What is your Occupation?</td>
<td></td>
</tr>
<tr>
<td>What is your area of particular expertise?</td>
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</tbody>
</table>
| Do you work in                                  | 1) Ministry of Health?  
2) Other Government sector?  
3) Non-Government sector?                      |
| Which activities are you involved in that improve health? (please describe in detail) | 1) Building healthy public policy  
2) Creating supportive environments  
3) Strengthening community action  
4) Developing personal skills  
5) Reorienting health services |

### Domain 1 Policies and Plans Pertaining to Health Promotion

**Definition:** Policies and plans for Health Promotion refer to all policies and plans that prioritise improving health. This encompasses strategies such as building healthy public policy, creating a supportive environment, developing personal skills, strengthening community action, and reorienting the health services. These strategies set the goals for improving health, provide guidelines for practice that improve health, and provide frameworks for action to improve health across all sectors in Oman.

1. What term is most commonly used in Oman for activities to improve health? Please select only one answer from the following  
   - Health Promotion  
   - Health Education  
   - Public Health  
   - Don’t Know

1.1 Is Health promotion reflected in national government policies including health policy in Oman? Please select only one answer from the following  
   - A. Yes, there is standalone health promotion policy  
   - B. Yes, health promotion is part of an overall health policy  
   - C. Yes, there are health promotion elements in policies other than health policy  
   - D. No, there is no reference to health promotion in health policies  
   - E. No information available  
   - F. Don’t know
1.1.1 Are you aware of available policies/legislation/regulations in Oman that promote a healthy lifestyle in relation to each of the following ...

Please select only one answer from the following options of the stage of development

**Stage of Development Questions**
For the questions below, please choose one of the stages of development (A-F) next to each question. The letters (A-F) refer to:

A: Fully implemented: This means that the activity is totally in place and working well for all the health promotion priorities.
B: Partially implemented: This means that the activity is partially in place and now in operation for some, or all, of the health promotion priorities.
C: Actioned: This means that work has started but that is too early to assess impact or outputs.
D: Under development: This means that there has been a commitment on a national level to implement the activity, and that work is under way to develop it.
E: Being considered: This means that the activity is being considered for implementation but no firm commitment has yet been given.
F: Not currently actioned: This means that the activity has either not been considered or has been rejected for implementation.
G: Don't know.

<table>
<thead>
<tr>
<th>1.1.1a reduce consumption of tobacco product at.....</th>
<th>National Level?</th>
<th>Regional Level?</th>
<th>Provincial Level?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A: Fully implemented</td>
<td>A: Fully implemented</td>
<td>A: Fully implemented</td>
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<tr>
<td></td>
<td>B: Partially implanted</td>
<td>B: Partially implanted</td>
<td>B: Partially implanted</td>
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<td></td>
<td>C: Actioned</td>
<td>C: Actioned</td>
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<td>D: Under Development</td>
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<td>E: Being considered</td>
<td>E: Being considered</td>
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<td>F: Not currently actioned</td>
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<td>G: Don’t Know</td>
<td>G: Don’t Know</td>
<td>G: Don’t Know</td>
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<thead>
<tr>
<th>1.1.1b reduce consumption of fatty, sugary and salty food at.....</th>
<th>National Level?</th>
<th>Regional Level?</th>
<th>Provincial Level?</th>
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<tbody>
<tr>
<td></td>
<td>A: Fully implemented</td>
<td>A: Fully implemented</td>
<td>A: Fully implemented</td>
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<td>G: Don’t Know</td>
<td>G: Don’t Know</td>
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| Regional Level? | A: Fully implemented  
|                | B: Partially implanted  
|                | C: Actioned  
|                | D: Under Development  
|                | E: Being considered  
|                | F: Not currently actioned  
|                | G: Don’t Know |
| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know |
| 1.1.1c Increase physical activity at..... | |
| National Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |
| Regional Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |
| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know |
| 1.1.1d control and prevent consumption of illicit drugs at..... | |
| National Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |
| Regional Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know

| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know |

1.1.2 Are you aware of policies/legislation/regulations in Oman addressing ...  
Please select only one answer from the following options

1.1.2a Prevention of Cardiovascular diseases at.....

| National Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |

| Regional Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |

| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know |

1.1.2b Prevention of diabetes at.....

| National Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know |

<p>| Regional Level? | A: Fully implemented |</p>
<table>
<thead>
<tr>
<th>Level</th>
<th>A: Fully implemented</th>
<th>B: Partially implanted</th>
<th>C: Actioned</th>
<th>D: Under Development</th>
<th>E: Being considered</th>
<th>F: Not currently actioned</th>
<th>G: Don’t Know</th>
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<td>National Level?</td>
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<td>Regional Level?</td>
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<td>Provincial Level?</td>
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1.1.2c Prevention of cancer.....

1.1.2d Prevention of chronic respiratory diseases at.....
<table>
<thead>
<tr>
<th>Level</th>
<th>A: Fully implemented</th>
<th>B: Partially implanted</th>
<th>C: Actioned</th>
<th>D: Under Development</th>
<th>E: Being considered</th>
<th>F: Not currently actioned</th>
<th>G: Don’t Know</th>
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<tr>
<td>Provincial</td>
<td>E: Being considered</td>
<td>F: Not currently actioned</td>
<td>G: Don’t Know</td>
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<tr>
<td>Regional Level</td>
<td>A: Fully implemented</td>
<td>B: Partially implanted</td>
<td>C: Actioned</td>
<td>D: Under Development</td>
<td>E: Being considered</td>
<td>F: Not currently actioned</td>
<td>G: Don’t Know</td>
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<tr>
<td>Provincial</td>
<td>A: Fully implemented</td>
<td>B: Partially implanted</td>
<td>C: Actioned</td>
<td>D: Under Development</td>
<td>E: Being considered</td>
<td>F: Not currently actioned</td>
<td>G: Don’t Know</td>
</tr>
</tbody>
</table>

1.1.3 Are you aware of policies/legislation/regulations in Oman addressing... Please select only one answer from the following options

1.1.3a Increase access to safe and clean environment at.....

<table>
<thead>
<tr>
<th>Level</th>
<th>A: Fully implemented</th>
<th>B: Partially implanted</th>
<th>C: Actioned</th>
<th>D: Under Development</th>
<th>E: Being considered</th>
<th>F: Not currently actioned</th>
<th>G: Don’t Know</th>
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<tr>
<td>Regional Level</td>
<td>A: Fully implemented</td>
<td>B: Partially implanted</td>
<td>C: Actioned</td>
<td>D: Under Development</td>
<td>E: Being considered</td>
<td>F: Not currently actioned</td>
<td>G: Don’t Know</td>
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1.1.3b increase access to universal health services at.....

<table>
<thead>
<tr>
<th>Level</th>
<th>A: Fully implemented</th>
<th>B: Partially implanted</th>
<th>C: Actioned</th>
<th>D: Under Development</th>
<th>E: Being considered</th>
<th>F: Not currently actioned</th>
<th>G: Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Level</td>
<td>A: Fully implemented</td>
<td>B: Partially implanted</td>
<td>C: Actioned</td>
<td>D: Under Development</td>
<td>E: Being considered</td>
<td>F: Not currently actioned</td>
<td>G: Don’t Know</td>
</tr>
</tbody>
</table>
| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know |
### 1.1.3c Increase access to universal health education at.....

| National Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know  

| Regional Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know  

| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know  

### 1.1.3d Increase access to employment at.....

| National Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know  

| Regional Level? | A: Fully implemented  
|                 | B: Partially implanted  
|                 | C: Actioned  
|                 | D: Under Development  
|                 | E: Being considered  
|                 | F: Not currently actioned  
|                 | G: Don’t Know  

| Provincial Level? | A: Fully implemented  
|                  | B: Partially implanted  
|                  | C: Actioned  
|                  | D: Under Development  
|                  | E: Being considered  
|                  | F: Not currently actioned  
|                  | G: Don’t Know  

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1.2 Are you aware of national plans of action, strategies, guidelines or programmes in Oman on the following:

Please select only one answer from the following options

| 1.2a National plan for tobacco control | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|---------------------------------------|--------------------------------------------------|
| 1.2b National plan for healthy diet   | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 1.2c National plan for physical activity | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 1.2d National plan for prevention and control consumption of illicit drugs and alcohol | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 1.2e National plan for prevention and control of cardiovascular disease | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 1.2f National plan for prevention and control of diabetes | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 1.2g National plan for prevention and control of cancer | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|----------------------------------------------------------|

| 1.2h National plan for prevention and control of chronic respiratory diseases | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|-----------------------------------------------------------------------------|

| 1.2i National plan for settings-based health promotion such as schools, workplaces and communities | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|-----------------------------------------------------------------------------|

| 1.2j National plan for information, education and communication/health education/social mobilization or related others | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|-----------------------------------------------------------------------------|

| 1.3 Does Oman have recent guidelines (within the last five years) for staff members to plan, implement and evaluate activities promoting health. Please select only one answer from the following options | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|-----------------------------------------------------------------------------|

**Domain 2 - Core of expertise in health promotion**  
**Definition:** Core of Expertise refers to leadership within the national Ministry of Health for Health Promotion development, coordination and partnerships which involve: i) the existence of a unit/centre/department/council for Health Promotion and/or non-communicable diseases, ii) Health Promotion best practice.

| 2.1a Does Oman have an identifiable/designated ‘health promotion’ for non-communicable | □ Yes  
□ No  
□ Don't know |
diseases prevention unit/section/centre/department within the national Ministry of Health, or a group described differently but with similar functions which are explicitly stated? Please select only one answer from the following options.

2.1b If the answer to the above question is yes please answer the following to indicate the stage of development of this department. Please select only one answer from the following options.

| A: Fully implemented |
| B: Partially implanted |
| C: Actioned |
| D: Under Development |
| E: Being considered |
| F: Not currently actioned |
| G: Don’t Know |

2.2 Do you consider that the main focus of health promotion activity is appropriate for best practice in Oman? Please select only one answer from the following options.

| Yes |
| No |
| Don’t know |

Domain 3 - Collaborative mechanisms within government
Definition: Health Promotion collaborative mechanisms refer to coordinating mechanisms within the Ministry of Health, and across national government, to develop policy and implement plans for Health Promotion activities that for prevent and control non-communicable diseases in Oman.

3.1 Is there systematic coordination of activities that promote health by preventing and controlling non-communicable diseases within national/state or lower level public health programmes in the ministry of health? Please select only one answer from the following options.

| A: Fully implemented |
| B: Partially implanted |
| C: Actioned |
| D: Under Development |
| E: Being considered |
| F: Not currently actioned |
| G: Don’t Know |

3.2 Is there any evidence of

| A: Fully implemented |
A collaboration between the public health sector and the curative services sector within the Ministry of Health for joint activities that promote health by preventing and controlling non-communicable diseases at the national and provincial level in Oman? Please select only one answer from the following options.

<table>
<thead>
<tr>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: Partially implanted</td>
</tr>
<tr>
<td>C: Actioned</td>
</tr>
<tr>
<td>D: Under Development</td>
</tr>
<tr>
<td>E: Being considered</td>
</tr>
<tr>
<td>F: Not currently actioned</td>
</tr>
<tr>
<td>G: Don't Know</td>
</tr>
</tbody>
</table>

3.3 Is there any evidence of collaboration between ministries within the national government for the coordination of joint activities that promote health at the national and provincial and local levels? Please select only one answer from the following options.

<table>
<thead>
<tr>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Fully implemented</td>
</tr>
<tr>
<td>B: Partially implanted</td>
</tr>
<tr>
<td>C: Actioned</td>
</tr>
<tr>
<td>D: Under Development</td>
</tr>
<tr>
<td>E: Being considered</td>
</tr>
<tr>
<td>F: Not currently actioned</td>
</tr>
<tr>
<td>G: Don't Know</td>
</tr>
</tbody>
</table>

Domain 4 - Programme Delivery
Definition: Health Promotion programme delivery for prevention and control of non-communicable diseases to deliver structures and mechanisms for Health Promotion priorities at national and/or international levels, including support for inter-sectoral partnerships.

4.1 Does Oman have one or more nationwide structure/mechanisms branching out nationwide to regions for delivery of programmes that promote health by preventing and controlling non-communicable diseases? Please select only one answer from the following options.

<table>
<thead>
<tr>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Fully implemented</td>
</tr>
<tr>
<td>B: Partially implanted</td>
</tr>
<tr>
<td>C: Actioned</td>
</tr>
<tr>
<td>D: Under Development</td>
</tr>
<tr>
<td>E: Being considered</td>
</tr>
<tr>
<td>F: Not currently actioned</td>
</tr>
<tr>
<td>G: Don't Know</td>
</tr>
</tbody>
</table>

4.2 Is there use of evidence-based health promotion planning, implementation and evaluation for the prevention and control of non-communicable diseases in Oman? Please select only

<table>
<thead>
<tr>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Fully implemented</td>
</tr>
<tr>
<td>B: Partially implanted</td>
</tr>
<tr>
<td>C: Actioned</td>
</tr>
<tr>
<td>D: Under Development</td>
</tr>
<tr>
<td>E: Being considered</td>
</tr>
<tr>
<td>F: Not currently actioned</td>
</tr>
<tr>
<td>G: Don't Know</td>
</tr>
<tr>
<td>Question</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 4.3 Are combinations of intervention strategies used in activities that promote health by preventing and controlling non-communicable diseases (intervention strategies include empowerment through health communication; development of environments that are supportive of health, e.g., policies and laws on food or tobacco; reorientation of services and advocacy for health)? Please select only one from the following options. | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know                                                                 |
| Domain 5 - Partnership among NGOs  
Definition: Health Promotion partnership refers to a partnership between sectors for joint activities that promote health by preventing and controlling non-communicable diseases. This includes partnership between non-governmental organisations, the private sector, civil society and government. |                                                                                                 |
| 5.1 Is there collaboration between non-governmental organisations/civil societies and national government for joint activities that promote health by preventing and controlling non-communicable diseases in Oman? Please select only one answer from the following options. | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know                                                                 |
| 5.2 Is there collaboration between private sector establishments and national government for joint activities that promote health by preventing and controlling non-communicable diseases? Please select only one answer from the following options. | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know                                                                 |
5.3 Is there collaboration between private sector and nongovernmental organisations/civil societies for joint activities that promote health by preventing and controlling non-communicable diseases in Oman? Please select only one answer from the following options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Fully implemented</td>
<td></td>
</tr>
<tr>
<td>B: Partially implanted</td>
<td></td>
</tr>
<tr>
<td>C: Actioned</td>
<td></td>
</tr>
<tr>
<td>D: Under Development</td>
<td></td>
</tr>
<tr>
<td>E: Being considered</td>
<td></td>
</tr>
<tr>
<td>F: Not currently actioned</td>
<td></td>
</tr>
<tr>
<td>G: Don’t Know</td>
<td></td>
</tr>
</tbody>
</table>

5.4 Do the partnerships between non-governmental organisations, the private sector and government cover...

| Control and prevention of tobacco consumption? | Yes | No | Don’t know |
| Control and prevention of unhealthy diet (consumption of fatty, sugary and salty food)? | Yes | No | Don’t know |
| Control and prevention of physical activity? | Yes | No | Don’t know |
| Control and prevention of consumption of illicit drugs and alcohol? | Yes | No | Don’t know |
| Control and prevention of cardiovascular diseases? | Yes | No | Don’t know |
| Control and prevention of diabetes? | Yes | No | Don’t know |
| Control and prevention of cancer? | Yes | No | Don’t know |
| Control and prevention of chronic respiratory diseases? | Yes | No | Don’t know |

5.5 Do the partnerships involve settings (for example schools, workplaces, community and cities)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
</table>
Please select only one answer from the following options.

Domain 6 - Health Promotion Professional Development
Definition: Health Promotion professional development refers to the development of qualified human resources with sufficient skills and knowledge to deliver essential Health Promotion action through delivering national-level advanced education and training programmes, and a professional association for health promotion practitioners, policymakers and researchers.

6.1 Does the government support (in cash and/or in kind) health promotion education and training at the undergraduate level? Please select only one answer from the following options.
A: Fully implemented
B: Partially implanted
C: Actioned
D: Under Development
E: Being considered
F: Not currently actioned
G: Don't Know

6.2 Does the government support (in cash and/or in kind) health promotion education and training for the prevention and control of non-communicable diseases at the undergraduate level? Please select only one answer from the following options.
A: Fully implemented
B: Partially implanted
C: Actioned
D: Under Development
E: Being considered
F: Not currently actioned
G: Don't Know

6.3 Does the government support (in cash and/or in kind) health promotion education and training at postgraduate levels? Please select only one answer from the following options.
A: Fully implemented
B: Partially implanted
C: Actioned
D: Under Development
E: Being considered
F: Not currently actioned
G: Don't Know

Domain 7 - Health Promotion Information Systems
Definition: Health Promotion Information systems refer to the mechanisms which are used to track and report on Health Promotion indicators relevant to health promotion policy, priorities and programmes, such as the national health information system that tracks and reports on risk factors, lifestyle, non-communicable diseases, Health Promotion interventions, programmes, strategies and plans, in the form of national-level research, surveys and follow up and evaluation reports.

7.1 Is there a mechanism to track and report at the national, regional (governorate) and provincial (Wilayat) levels on ... Please select only one answer from the following options.
Cardiovascular diseases?
- Yes
- No
- Don't know

Cancer?
- Yes
- No
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diabetes?</strong></td>
<td>☐ Don’t know</td>
</tr>
<tr>
<td><strong>Chronic respiratory diseases?</strong></td>
<td>☐ Yes</td>
</tr>
<tr>
<td></td>
<td>☐ No</td>
</tr>
<tr>
<td></td>
<td>☐ Don’t know</td>
</tr>
</tbody>
</table>

7.2 Is there a mechanism to track and report at the National, Regional (Governorate) and Provincial (Wilayat) levels on ...  
Please select only one answer from the following options.

| 7.2a1 Behavioural risk factors for the prevention and control of non-communicable diseases at the National level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| 7.2a2 Behavioural risk factors for the prevention and control of non-communicable diseases at the Regional (governorate) level?                              | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2a3 Behavioural risk factors for the prevention and control of non-communicable diseases at the Provincial (Wilayat) level?                              | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2b1 Use of tobacco at National level?                                                                                                                     | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2b2 Use of tobacco at the Regional (governorate) level?                                                                                                  | A: Fully implemented  
B: Partially implanted  
C: Actioned |

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| 7.2b3 Use of tobacco at the Provincial (Wilayat) level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2c1 Use of alcohol and use of illicit drugs at the National level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2c2 Use of alcohol and use of illicit drugs at the Regional (governorate) level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2c3 Use of alcohol and use of illicit drugs at the Provincial (Wilayat) level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2d1 Unhealthy diet at the National Level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2d2 Unhealthy diet at the Regional (governorate) level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
| 7.2d3 Unhealthy diet at the | A: Fully implemented |
| Domain 8 - Health Promotion Financing | Definition: Financing for Health Promotion refers to the allocation of sufficient, transparent and sustainable |

| Provincial (Wilayat) level? | B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |

| 7.2e1 Physical inactivity at the National level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |

| 7.2e2 Physical inactivity Regional (governorate) level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |

| 7.2e3 Physical inactivity at the Provincial (Wilayat) level? | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |

| 7.3 Is there a mechanism to track and report on social and environmental risk factors for non-communicable diseases at the National, Regional (Governorate) and Provincial (Wilayat) levels? Please select only one answer from the following options. | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |

| 7.4 Is there a mechanism to track and report on activities that promote health by preventing and controlling non-communicable diseases at the national, regional (governorate) and provincial (Wilayat) levels? Please select only one answer from the following options. | A: Fully implemented  
B: Partially implanted  
C: Actioned  
D: Under Development  
E: Being considered  
F: Not currently actioned  
G: Don’t Know |
resources of public financing for health promotion priorities at (National) or subnational (Governorates and Wilayats) levels to create and sustain effective national Health Promotion structures and strategies in Oman.

<table>
<thead>
<tr>
<th>8.1 Is there dedicated government funding for activities that promote health in Oman? (Please select only one answer from the following options).</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8.1.2 Does the country have a separate budget line for health promotion at the National, Regional (Governorate) or Provincial (Wilayat) levels</th>
<th>A: Fully implemented</th>
<th>B: Partially implanted</th>
<th>C: Actioned</th>
<th>D: Under Development</th>
<th>E: Being considered</th>
<th>F: Not currently actioned</th>
<th>G: Don't Know</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8.1.2 Are there arrangements at the national, regional (governorate)and provincial (Wilayat) levels for funding of health promotion from dedicated taxes or levies on tobacco, alcohol, petrol, or other products and services?</th>
<th>A: Fully implemented</th>
<th>B: Partially implanted</th>
<th>C: Actioned</th>
<th>D: Under Development</th>
<th>E: Being considered</th>
<th>F: Not currently actioned</th>
<th>G: Don't Know</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8.2 Is there funding for Surveillance, monitoring and evaluating of non-communicable diseases prevention and control activities/ functions?</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8.3 Is there funding for Health promotion capacity building for the prevention and control of non-communicable diseases activities/ functions?</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8.4 What are the major sources of funding for activities to prevent and control non-communicable diseases? Please select only one answer from the following options. General Government Revenue</th>
<th>Health Insurance</th>
<th>International Donors</th>
<th>Earmarked taxes on alcohol, tobacco, etc.</th>
<th>Don’t Know</th>
</tr>
</thead>
</table>

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APPENDIX C1: Semi-structured interview questions in English

1) What do you think about the results of the Health Promotion map for the prevention of non-communicable diseases in Oman (please revise Oman Health Promotion capacity wheel)?

2) How can we improve the capacity for Health Promotion to prevent and control NCDs in Oman?

3) There are gaps in Health Promotion all areas, but gaps seem slightly larger in the domains of a) programme delivery, b) Health Promotion information systems and c) Health Promotion financing. Why do you think gaps are larger in these three domains?

4) What are the solutions to overcome the three gaps?

5) As you can see, capacity development appears to be consistently lower in the regions and wilayats in Oman, compared to the national level. Why do you think there is inequality of Health Promotion capacity for NCD prevention in the regions and even greater inequality in the wilayats in Oman?

6) In your opinion, what are the strengths, weaknesses, opportunities and threats to improve Health Promotion capacity for the prevention of non-communicable diseases in Oman?

7) Finally, if you want to give some suggestions for strengthening existing government support for Health Promotion capacity directed at preventing and controlling non-communicable disease what are they?

Thank you again for participating in my project. I really appreciate it.
APPENDIX C2: Domain-specific qualitative study questions in English

<table>
<thead>
<tr>
<th>Domain Number</th>
<th>Health Promotion Domain (Grade)</th>
<th>Domain-specific question for key informant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Policies and plans for Health Promotion</td>
<td>Q1 Some participants in the Oman Health Promotion capacity for non-communicable diseases survey suggest that policies and plans are not implemented as well as they should be (the grade is only C). How do you think we can improve the implementation of policies and plans in Oman? Q2 Oman does not have a standalone Health Promotion policy. Usually the Ministry of Health formulates Health Promotion policies (but these usually called ‘health policies’). But there are some Health Promotion policies that are formulated by other sectors and even by His Majesty e.g. the policy formulated by His Majesty on the rights of the workforce in 2008. Do you think Oman should have a standalone Health Promotion policy that brings all these policies together?</td>
</tr>
<tr>
<td>2</td>
<td>Core of key expertise in Health Promotion</td>
<td>Why does Oman have no department/council of Health Promotion up to now?</td>
</tr>
<tr>
<td>3</td>
<td>Collaborative mechanism within government</td>
<td>How can we improve collaboration between the Ministry of Health and other governmental sectors in the area of Health Promotion and control of NCDs?</td>
</tr>
<tr>
<td>4</td>
<td>Programme delivery</td>
<td>How can we improve Health Promotion programme delivery in general, and specifically for the prevention and control of NCDs?</td>
</tr>
<tr>
<td>5</td>
<td>Partnership</td>
<td>How can we improve Health Promotion partnerships between the private sector and government sectors and NGOs, both in general and specifically for the prevention and control of NCDs?</td>
</tr>
<tr>
<td>6</td>
<td>Professional development</td>
<td>Why do we not have enough manpower in Health Promotion, both in general and specifically for the prevention and control of NCDs?</td>
</tr>
<tr>
<td>7</td>
<td>Information systems</td>
<td>Why does Oman have a gap in the area of Health Promotion information systems such as tracking indicators of behavioural risk factors and NCDs (including insufficient research, and evaluation reports)?</td>
</tr>
<tr>
<td>8</td>
<td>Health Promotion financing</td>
<td>Why does Oman have no separate budget for Health Promotion, both in general and specifically for the prevention</td>
</tr>
<tr>
<td>and control of NCDs?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D: Participant information sheet for the qualitative study

(copy to be retained by the participant)

Mapping the Capacity of Health Promotion Interventions for Non-Communicable Diseases in Oman
You are being invited to take part in a research study that involves an interview. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

Earlier research that mapped the capacity for Health Promotion in Oman revealed three gap areas where Health Promotion capacity was very insufficient. This interview aims to ask key informants about their impression of the current capacity for promoting health in Oman. It is hoped this study will provide a map to inform the building of capacity for health promoting policy and activities.

Who are the researchers?

This interview is part of a study for a Doctor of Philosophy degree carried out by the researcher Hiyam Al Riyami, and is supervised by Prof. Saoirse Nic Gabhainn at the National University of Ireland, Galway.

What would be involved?

You will be asked to take part in an interview asking about your knowledge, insights and ideas about current capacity and/or gaps in Health Promotion. During the interview, questions will focus on activities and polices that can promote health.

What will happen to the information?

With your permission, your responses will be recorded and then written up into what is called a transcript. No identifying information will be transcribed from the digital
recordings. The transcripts will only be accessible to the researcher and research supervisors, and will be kept securely, in strict accordance with the Data Protection Act. An analysis of these transcripts will be included in my doctoral thesis, submitted for publication in scientific journals and presented at international conferences. No one will be named or identifiable in any way in the reports of the study.

How will confidentiality be maintained?

All the data collected in the study will be treated confidentially. Data will be pseudo-anonymised. This means that all digital recordings and the transcripts will be coded to separate identities from actual data. Any identifying information will not be transcribed and a code will be used on the transcript instead, which can only be linked back to the identity of the interviewee by the researcher. All digital recordings will be stored on secure password protected computer equipment in encrypted files in a secure location, and will be destroyed once transcription is completed. All data records will remain confidential in a secure location on the NUIG campus and will be destroyed after a period of five years.

This research is approved by the Research Ethics Committee at the National University of Ireland (353) 91 495312, email: ethics@nuigalway.ie, Galway and by the Oman Centre of Studies & Research (968) 24 697551, email: mohrerac@gmail.com.

Are there any risks involved in taking part?

Some people may feel some level of stress and/or embarrassment if unable to answer questions. However, the questions posed do not have a right or wrong answer. Everybody has specific areas of knowledge depending on their area of work and therefore may not know answers to all, or even many, of the questions while having valuable insights into some of the questions. If you do not know an answer to a particular question, ‘Don’t know’ is a valuable response.

What if I wish to withdraw?
Your participation in this interview is completely voluntary and you may withdraw from the interview at any time.

*How long will it take?*

The interview should take approximately 45 minutes to 1 hour to complete.

*Contact information*

Thank you for participating in this study. If you need to contact me later, you can contact me at any time on 00-353-874637702 or by email at the email address h.al-riyami1@nuigalway.ie. I am happy to answer any questions you may have about the project. The supervisor of the project, Prof. Saoirse Nic Gabhainn, can be contacted at (phone: 00-353-91-493093 email: saoirse.nicgabhainn@nuigalway.ie); The NUI Research Ethics Committee can be contacted at: Phone: 00-353-91-495312; email: ethics@nuigalway.ie. The Centre of Studies & Research (968) 24 697551, email: mohrerac@gmail.com.

Dr. Hiyam Al Riyami
Dept. of Health Promotion, School of Health Science, NUI Galway, Ireland
Tel: (00353) 874637702, (00968) 99280606
Email: h.al-riyami1@nuigalway.ie
APPENDIX E: Consent form for the qualitative study

Mapping the Capacity of Health Promoting Intervention for Non-Communicable Diseases in Oman

This interview is part of a study for a Doctor of Philosophy degree carried out by the researcher Hiyam AL Riyami and is supervised by Prof. Saoirse Nic Gabhainn at the National University of Ireland, Galway.

I would like first to assure you that all information provided in this interview will be treated as completely confidential. The interviews will be anonymous and all the records will remain confidential, and eventually destroyed once the study is complete.

The aim of this research is to examine capacity directed towards Health Promotion for preventing non-communicable diseases in Oman.

The main objective is to examine the level of knowledge, skills, commitment, structures, systems and leadership that exist for promoting interventions (including policies, organisational and community level strategies) that are integrated into the existing structures for reducing non-communicable diseases in Oman.

The outcome of this interview will, hopefully, help me to determine the strengths, the weakness, the threats, the gaps, the challenges and opportunities, and to examine where further Health Promotion capacity is required to bridge the gaps in relation to non-communicable disease related Health Promotion capacities in Oman.

Your participation in this interview is completely voluntary and you may withdraw at any time. The interview should only take approximately 45 minutes to 1 hour to complete.

Confidentiality

The information you provide is anonymous. The digital audio file from the interview will only be accessed by the researcher and the data will be destroyed once the study is
completed. When the data is transcribed to paper, all names and identifying information will be removed. The purpose of collecting this data is to help the researcher gather information for the study and there will be no direct benefit, nor any risk to the participants. This interview has received ethical approval from the Research Ethics Committee NUI Galway and the Oman Research and Ethical Review & Approval Committee.

Background to the research

This research investigates the capacity directed towards Health Promotion for preventing non-communicable diseases in Oman. The study will involve mixed methods research approach that combines questionnaires and interviews. This part of the study involves an interview which will take around 45 minutes to 1 hour to complete.

Publication

The results of this project may appear in papers, books chapters, journal articles and in presentations at conferences, but you will not be identified in any of these reports. Individual results may be aggregated anonymously and research reported on aggregate results.

Please take your time to read this consent form before you sign to participate.

Declaration

- I am 18 years or older and I am competent to provide consent.
- I have read, or have had read to me, a declaration of consent that provides information about this research and this consent form.
- I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and I understand the description of the research that is being provided to me.
• I agree for my data to be used for scientific purposes and I have no objection to my data being published in scientific publications in a way that does not reveal my identity.

• I understand that if I make illicit activities known, these will be reported to appropriate authorities.

• I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights.

• I understand that I may refuse to answer any question and that I may withdraw at any time without penalty.

• I understand that my participation is fully anonymous and that no personal details about me will be recorded.

• I have received a copy of this agreement.

Electronic consent

Please select your choice below:

I agree to the above declaration and wish to participate in this study:

    Agree

    Disagree

Thank you again. If you have any questions about this research you can ask now or at any point during the study.

Dr. Hiyam Al Riyami
Dept. of Health Promotion
School of Health Science, NUI Galway, Ireland
Tel: (00353) 874637702, (00968) 99280606
Email: h.al-riyami1@nuigalway.ie

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APPENDIX F1: Invitation email

I wish to invite you to participate in a survey to help develop our understanding of the capacity for improving health in Oman with a special focus on the area of non-communicable diseases. This invitation is being sent to people all around Oman working in activities that improve health.

You are being invited to participate in this survey as you have been identified as a health policymaker, an expert in public health, or one of the many people working in activities that improve health, such as academics, researchers, general practitioners and health workers, or people who work in other ministries and sectors that are collaborating on committees and in activities with the Ministry of Health on issues aiming to improve the health of the people in Oman.

Anyone contributing to the process of improving health from government and non-government sectors, as well as health experts working in different organisations in Oman, is invited to answer this online questionnaire in order to help map the country’s capacity for improving health.

If you would like to participate please follow the link to the online questionnaire below (The first link is on English language while the second link is on Arabic language): [https://www.surveymonkey.com/r/XHCC7N9](https://www.surveymonkey.com/r/XHCC7N9) English Language Survey

[https://www.surveymonkey.com/r/SN8GD7M](https://www.surveymonkey.com/r/SN8GD7M) بالعربي ARABIC Language Survey

Please forward this invitation to anyone you know who is working in activities that improve health in Oman. You can contact me at my email (h.al-riyami1@nuigalway.ie). I would be glad to provide assistance and to answer any queries regarding the study and the questionnaire. The closing date for this survey is one month after you receive this email. You will receive a reminder email from me after two weeks.

Thank you for your help.
Yours sincerely,
Hiyam Al Riyami
APPENDIX F2: Reminder email for the SurveyMonkey Survey
Sent on 18th of May (two weeks after email in Appendix F1)

Reminder email

Two weeks ago I invited you to participate in an anonymous survey (you will not be asked for your name) to help develop our understanding of the capacity for improving health in Oman with a special focus on the area of non-communicable diseases.

Thank you if already participated in the survey.

If you have not yet participated I invite you to take the opportunity to participate now.

This invitation is being sent to people all around Oman working in activities that improve health.

You are being invited to participate in this survey as you have been identified as a health policymaker, an expert in public health, or one of the many people working in activities that improve health, such as academics, researchers, general practitioners and health workers, or people who work in other ministries and sectors that are collaborating on committees and in activities with the Ministry of Health on issues aiming to improve the health of the people in Oman.

Anyone that contributes to the process of improving health from government and non-government sectors, as well as health experts working in different organisations in Oman, is invited to answer this online questionnaire in order to help map the country’s capacity for improving health.

Please try to answer all the questions and if you don’t know any question choose don’t know

If you would like to participate please follow the link to the online questionnaire below:
Please forward this invitation to anyone you know who is working in activities that improve health in Oman. You can contact me at my email (h.al-riyami1@nuigalway.ie). I would be glad to provide assistance and to answer any queries regarding the study and the questionnaire. The closing date for this survey is two weeks after you receive this email.

Thank you for your help.

Yours sincerely,

Hiyam Al Riyami
APPENDIX G: Reliability of the NCD question groups

<table>
<thead>
<tr>
<th>Questions</th>
<th>N</th>
<th>Cronbach’s alpha</th>
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<tr>
<td>Q8</td>
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Reliability Cronbach’s Alpha is between 0.74 to 0.97
APPENDIX H: Initial template of the Omani health promotion capacity map

Theme 1 Domains of the health promotion capacity for prevention of NCDs in Oman

1.1 Policies and plans pertaining to health promotion

1.1.1 Gap in health promotion policy
   1.1.1.1 There are gaps in policies and plans pertaining to so many health promotion issues in Oman.
   1.1.1.2 It takes long to finalise plans and policies in Oman.
   1.1.1.3 Policies and plans are often not implemented, or they are only partially implemented
   1.1.1.4 Policies are approved without any financial section
   1.1.1.5 Oman needs policies, rules and regulations.
   1.1.1.6 There is no well-established source of financing to this strategy or to this policy
   1.1.1.7 Oman has no infrastructure for health promotion within the ministry of health as well as in some other key ministries to push health promotion policies to improve health for the people of Oman.
   1.1.1.8 There are no specific specialised people who can extract data and use it for advocacy and improving the health of people of Oman through improving the policies by rectifying the current situation that needs correction in many areas.
   1.1.1.9 There is no standalone health promotion policy to help us in materialising and bringing all these policies together.
   1.1.1.10 Oman is not yet able to implement, monitor and strengthen the health promotion policies and go into even further detail regarding those policies. It does not only include raising awareness, but also includes working with people within the ministry of health, as well as other sectors in the delivery modes
   1.1.1.11 Still health promotion policies for NCDs did not come from higher policy level of government entity or the supreme council, the ministerial council or even higher.
   1.1.1.12 In Oman, laws and regulations are quite sophisticated
   1.1.1.13 Actual implementation of policies is weak
   1.1.1.14 Oman has fine laws but we are not able to see them to fruition
   1.1.1.15 Lack of awareness of the people regarding policies who are supposed to implement them.
1.1.1.16 Oman has a lack of regulations causing weak implementation of policies.
1.1.1.17 There is lack of monitoring systems which are not in place causing weak implementation of policies.
1.1.1.18 In Oman, there is no building of the regulations, the systems need to be in place.
1.1.1.19 In Oman, people do not understand their roles in improving health.
1.1.1.20 In Oman, there is no policy advocated and rubber stamped at the highest level of government.
1.1.1.21 Until now, Oman does not have enough policies and plans pertaining to so many health promotion issues in the country.
1.1.1.22 Unfortunately, in Oman, it takes a long time to finalise policies.
1.1.1.23 When policies and plans are finalised, they are often not implemented, or they are only partially implemented.
1.1.1.24 There is no political agreement on formulation of policies to be called health promotion instead of only health policies.
1.1.1.25 There is no evaluation and monitoring and conducting impact studies are of policies and plan of action.

1.1.2 Solutions to bridge the gaps in policies pertaining to health promotion
1.1.2.1 Develop more health promotion policies and regulations pertaining to health promotion.
1.1.2.2 Development of health policies and rules and regulations which provide an environment conducive to health.
1.1.2.3 Development of health promotion infrastructure for the implementation of health promotion policies to improve health for the people.
1.1.2.4 Development of a policy for NCD and having this policy is a strength.
1.1.2.5 Approved policy with well-established source of financing support to assure implementation of all the activities.
1.1.2.6 Development of standalone health promotion policy is required for NCD control and prevention.
1.1.2.7 Commitment from the policymakers within the ministry of health, as well as in the cabinet.
1.1.2.8 Collaboration and partnership is important to develop standalone health promotion policy to translate the concept of health in all policies into action.
1.1.2.9 Raising awareness and working with people within the ministry of health, as well as other sectors in the delivery modes to be able to implement, to monitor and to strengthen health promotion policies for non-communicable diseases.
1.1.2.10 Launch health promotion policies for prevention and control of NCDs.
1.1.2.10.1 Some policies and laws might be there but further work needs to be done on building capacity to implement them.
1.1.2.10.2 Having specific NCD policies is more helpful and useful in trying to get multi-sectoral support.
1.1.2.10.3 The way to implement policy is by advocating them and rubber stamping them at the highest level of government possible.
1.1.2.10.4 The challenge is to start developing plans and policies, which takes long periods of time until finalisation.
1.1.2.10.5 The challenges are that when these policies and plans come out, they are often not implemented, or they are only partially implemented.
1.1.2.10.6 The epidemic of non-communicable disease forces the needs for standalone health promotion policy to highlight the importance of prevention of these diseases.
1.1.2.10.7 Political agreement on formulation of health promotion polices to prevent and control NCD policies is needed, which is called health promotion instead of only health policies.
1.1.2.10.8 On-going monitoring and evaluation of policies is required.
1.1.2.10.9 Conducting impact studies on policies, monitoring, evaluation and assessment of the outcome of these policies are required.
1.1.2.10.10 Health promotion policies improve capacity.
1.1.2.10.11 Develop health promotion policies, legislation, regulations, plans, strategies, guidelines, programmes and regulations.
1.1.2.10.12 NCDs require specific policies.
1.1.2.10.13 Be able to implement, monitor and strengthen those policies and maybe go into even further detail about those policies to improve the health promotion capacity.
1.1.2.11 Work on the five health promotion strategies of Ottawa Charter, to improve the situation of NCDs.
1.1.2.12 Building healthy public policy to have a comprehensive strategy to approve.
1.1.2.12.1 Creating supportive environment
1.1.2.12.2 Strengthening community action
1.1.2.12.3 Developing personal skills
1.1.2.12.4 Reorient the service

1.1.3 Gaps in health promotion plans
1.1.3.1 There are no agreements to develop and implement strategies or plans of health promotion.
1.1.3.2 Lack of awareness and knowledge of the importance of developing health promotion plan of action and its impact on the reduction of non-communicable disease.

1.1.3.3 There is no health promotion plans supported by the minister or by the secretaries in Ministry of Health

1.1.3.3.1 There is no comprehensive strategy to be planned to overcome gaps in the health promotion capacity.

1.1.3.4 There are no Health Promotion plans of action adopted by higher level authorities in the government.

1.1.3.5 There is no delegation of roles and responsibilities among multi-sectors that work on health promotion and NCDs

1.1.3.6 Other sectors work on health promotion and NCDs and do not implementation and monitor their health promotion strategies and activities

1.1.3.7 There is no allocation of financial resources to the plan of action for health promotion capacity to prevent NCDs.

1.1.3.8 There is no external evaluator to evaluate these plans to decide how much was achieved and how much still remains beyond achievement.

1.1.4 Solutions to bridge the gaps in health promotion plans

1.1.4.1 Agreements to develop and implement strategies or plans of health promotion are required.

1.1.4.2 Advocate and raise awareness and knowledge of the importance of developing health promotion plan of action and its impact on the reduction of non-communicable diseases.

1.1.4.3 Develop well delineated health promotion plans which are supported by the minister or by the secretaries in Ministry of Health

1.1.4.4 Health promotion of action adopted by higher level authorities in the government.

1.1.4.5 All sectors should take these roles of developing plans and strategies as their own responsibilities.

1.1.4.6 All sectors should implement and monitor their health promotion strategies and activities.

1.1.4.7 Ensure that there is a plan of action identifying the roles of each sector.

1.1.4.8 Allocation of financial resources to the plan of action for health promotion capacity to prevent NCDs.

1.1.4.9 Have a health promotion plan of action is strength.

1.1.4.10 A comprehensive strategy needs to be planned to overcome the gaps in health promotion capacity.
1.1.4.11 The minister of health should involve other sectors relevant to the promotion and control of NCD from the beginning, from the development of strategies to the development of action plans.

1.1.4.12 All other sectors should work together from the beginning when the plan is developed.

1.1.4.13 A higher body in the government should follow the implementation of health promotion plan of action.

1.1.4.14 Develop a framework for monitoring and evaluation to follow the implementation of health promotion plan of action.

1.1.4.15 An external evaluator is needed to evaluate these plans and decide how much was achieved and how much still remains beyond achievement.

1.2 Core of expertise in health promotion

1.2.1 Gaps in the core of expertise domain in health promotion

1.2.1.1 Health promotion infrastructure is non-existing in Oman.

1.2.1.2 There is no core expertise and leadership within the national ministry of health for health promotion development, coordination and partnerships.

1.2.1.3 Oman has no infrastructure for health promotion to prevent NCDs within the ministry of health as well as in some other key ministries.

1.2.1.4 There is no identifiable ‘health promotion’ unit/section/centre/department within the ministry of health or in the government.

1.2.1.5 Oman does not have even a small unit for health promotion with one or two people working in each of them.

1.2.1.6 Lack of awareness of the idea or the concept of health promotion by all partners, especially the leaders and policymakers in the health sector itself causes

1.2.1.6.1 Health promotion activity financing is not prioritised.

1.2.1.6.2 More attention is given to other issues in the health sectors which they think require attention or are more worthy to get priority in health financing.

1.2.1.6.3 Health promotion programmes are lagging behind or not implemented.

1.2.1.6.4 No evaluation and follow up for health promotion activities.

1.2.1.7 There is no advocacy for the concept of health promotion in Oman itself.

1.2.1.8 The meaning and concepts of health promotion are not very clear to many people, whether they work in the ministry of health or other key ministries and other government departments.
1.2.1.9 There is no financial support for health promotion because there is no infrastructure of health promotion

1.2.2 Solutions to bridge the gaps in core of expertise in health promotion

1.2.2.1 Develop infrastructure for health promotion within the ministry of health as well as in some other key ministries.

1.2.2.2 Advocate and raise awareness and knowledge of the importance of developing health promotion infrastructure.

1.2.2.3 The advocacy for the concept of health promotion in Oman itself.

1.2.2.4 Financial support to the health promotion infrastructure.

1.2.2.5 Improvement in the domain of core of expertise and leadership as follows:

1.2.2.5.1 Need to start from the beginning, including people within the health sector to improve from A to Z including people within the health sector.

1.2.2.5.2 Improve the understanding of what we mean by health promotion and all the different five elements of health promotion.

1.2.2.5.3 Advocate the concept of health promotion in Oman itself for the ministry of health or other key ministries and other government departments.

1.2.2.5.4 Clarify that health promotion does not mean health education and that health education is inadequate to prevent and control NCDs.

1.2.2.5.5 Clarify that health promotion is about how to act to change the environment to make it more conducive to health, what we are actually going to do to improve people’s health.

1.2.2.5.6 Work altogether at a higher level to build a health promotion infrastructure.

1.2.2.5.7 To identify the health promotion capacity gaps to understand it very well and plan how to overcome these gaps.

1.2.2.5.8 We need to target these problems from all levels, starting from top management down to the smallest or the most junior employees in our organisations.

1.2.2.5.9 We need to develop rewarding and punishment mechanisms in our organisation.

1.2.2.5.10 To improve, we need to develop monitoring systems and mechanisms like the private sector.

1.2.2.5.11 To improve, not only raising awareness is required but working with people within the ministry of health, as well as other sectors in the delivery modes is also important.

1.2.2.5.12 Oman has to have a comprehensive strategy outlining all the eight key areas of health promotion.
1.2.2.5.13 Build an infrastructure for health promotion within the ministry of health as well as in some other key ministries.
1.2.2.5.14 Build local capacity in the field of health promotion for non-communicable diseases.
1.2.2.5.15 Advocate what is health promotion.
1.2.2.5.16 Adapt the society and the environment to promote and encourage changes in behaviour.
1.2.2.5.17 Develop a comprehensive strategy on all the health promotion capacity gaps.
1.2.2.5.18 Building, monitoring and evaluating health promotion interventions for non-communicable diseases and move forward on all aspects of health promotion.
1.2.2.5.19 To overcome the health promotion capacity gaps by making the maximum utilisation of what we have at present and try to sharpen them, update them and work on them more.

1.3 Collaborative mechanism between government sectors and ministries for prevention and control of Non-Communicable Diseases in Oman.

1.3.1 Gaps in the collaborative mechanism within the government
1.3.1.1 There are not enough collaborations between the ministry of health departments and other government sectors.
1.3.1.2 Technical guidance is needed on how other sectors can do a better job to benefit the health of the people in Oman.
1.3.1.3 There are no strategic effective ways of collaboration followed.
1.3.1.4 There are duplications of activities, and some activities are missing. Nobody takes care of them in ministries because of a lack of strategic planned collaboration.
1.3.1.5 Lack of collaboration with other sectors either within the ministry or with external agencies causes duplication of activities and some activities are missing, which nobody is taking care of.
1.3.1.6 Without multi-sectoral collaboration, health promotion in Oman cannot succeed.
1.3.1.7 Health promotion strategy is not only for the health sector. Therefore, to overcome these gaps, we need to have a proper strategy involving other sectors.
1.3.1.8 Target groups that are in need are missing because of no effective collaboration exists (e.g. children, women, teenagers and old people).
1.3.1.9 Oman does have some collaboration either within the ministry or with external agencies for health promotion. But still we need much more than that.

1.3.1.10 Oman has some activities that are missing and nobody is taking care of them.

1.3.2 Solutions to bridge the gaps in Health Promotion Collaborative mechanisms.

1.3.2.1 The main areas are to build and strengthen the multi-sectoral collaboration.

1.3.2.2 Develop collaboration with other sectors either within the ministry or with external agencies.

1.3.2.3 More collaboration is required between all organisations to avoid duplication and not to miss any activity or any target group of audience.

1.3.2.4 Develop collaboration with other sectors either within the ministry or with external agencies.

1.3.2.5 Establishment of effective collaboration with other sectors will prevent the duplication of activities and the missing of any activity.

1.3.2.6 Developing collaboration can be achieved by:

1.3.2.6.1 Strengthening the multi-sectoral collaboration.

1.3.2.6.2 Developing a comprehensive strategy with all governmental and NGOs partners.

1.3.2.6.3 Disseminating health promotion strategies to all partners.

1.3.2.6.4 Other sectors are committed to doing their job in health promotion, and they are committed to improving Oman.

1.3.2.6.5 Technical guidance is needed on how other sectors can do a better job to benefit the health of the people in Oman.

1.3.2.6.6 If we want to get other sectors involved, our own capacity within the ministry of health on the understanding of health promotion needs to improve.

1.3.2.6.7 To improve collaboration, we need to have plan of actions at different levels.

1.3.2.6.8 Developing collaboration by having a shared vision with these sectors.

1.3.2.6.9 By making governmental sectors fully understand their roles and responsibilities, each ministry should know their indicators and plan strategic action, and they should achieve it in the given time limit.

1.3.2.6.10 Developing collaboration by explaining to them successful stories of collaboration from different countries.

1.3.2.6.11 Building strategic collaboration with governmental sectors in a different way
1.3.2.6.11.1 By explaining the statistical data of how we need this collaboration to reduce the epidemic NCDs and what statistical indicators should they achieve to prevent and control NCDs.

1.3.2.6.11.2 Developing collaboration by having a shared plan of action, by planning with them, and by developing strategies with them.

1.3.2.6.11.3 Establishing strategic collaboration within the private sector for social responsibility programmes.

1.4 Programme delivery

1.4.1 Gaps in health promotion programme delivery

1.4.1.1 There are gaps in health promotion programmes for NCDs and for so many health problems.

1.4.1.2 Find a gap in health promotion programme delivery, which is not strange.

1.4.1.3 Oman had a problem with oil prices in the past few years, and that was one of the main reasons why several programmes were hit hard unfortunately.

1.4.1.4 Financial issues are a big constrain in every programme including health promotion.

1.4.1.5 No special budget for any programme in Oman

1.4.1.6 No predetermined money for every activity or programme in the ministry, and that is the way the ministry has been working.

1.4.1.7 Ministries need to allocate a specific budget for specific programmes.

1.4.1.8 The multi-sectoral is a challenge for this programme.

1.4.1.9 There is no approved strategy cause.

1.4.1.10 There is a deficiency in the monitoring of health promotion programmes which causes gaps in health promotion capacity in Oman.

1.4.1.11 Tobacco control for example is significantly lagging behind.

1.4.1.12 There is no basic understanding of what is happening in the country regarding diet and physical activity and tobacco use.

1.4.1.13 Do not know what is happening in the country regarding nutrition. We do not know what is happening in nutrition in Oman, despite having four surveys in 1991, 2000, 2009 and 2017.

1.4.1.14 Care of people with diabetes with other NCDs is significantly lagging.

1.4.1.15 Using health education strategy is not behaviour effective enough to change behaviours but also to improve NCD prevention and control.

1.4.2 Solutions to bridge the gaps in health promotion programme delivery

1.4.2.1 Programme delivery can be improved by having clear rules and responsibilities for every party.
1.4.2.2 Develop strategic partnerships with other government sectors for the social responsibility that includes programme delivery of health promotion.
1.4.2.3 Setting earmarking for any activities for health promotion.
1.4.2.4 Evaluation, monitoring and conducting impact studies on programme deliveries.
1.4.2.5 Close monitoring and evaluation of whatever programme is being proposed.
1.4.2.6 The higher authorities can work to assign a special budget for health promotion programmes, and also to work together with other sectors.
1.4.2.7 Secure the sustainability of this programme.
1.4.2.8 Strengthen health promotion programmes by advocating conducting a monitoring programme and also evaluation, and perform impact studies for any programme.
1.4.2.9 An external evaluator who can come and evaluate these plans and say how much was achieved and how much still remains beyond achievements is needed.
1.4.2.10 Training more people on health promotion.
1.4.2.11 Improvement of the gaps in health promotion programme delivery.
1.4.2.12 Implement and sustain health promotion programmes.
1.4.2.13 Develop a mechanism of health promotion programmes from the national level to the regional and provincial levels.
1.4.2.14 Monitor and evaluate the health promotion programme and conduct impact studies for any programme.
1.4.2.15 Advocate for health promotion programme and professional development.
1.4.2.16 People are being trained over the last few years and they are aware of the concept of health promotion.
1.4.2.17 Pushing the issue of education and developing professionals in our health sector and in other sectors.

1.5 Health promotion partnership among non-governmental organizations, private sectors and government

1.5.1 Gaps in health promotion partnership
1.5.1.1 There is no effective sustainable health promotion partnership.
1.5.1.2 There is no shared vision for health promotion among non-governmental organizations, private sectors and the government.
1.5.1.3 There are no effective and creative ways to establish strategic health promotion partnerships.
1.5.1.4 Strategic partnership within the private sector for social responsibility programmes.
1.5.1.5 Yet there is no comprehensive health promotion strategy with all governmental sectors, NGOs and private partners in Oman.

1.5.1.6 There is no delegation of health promotion responsibilities and roles among governmental and non-governmental organizations and private sectors.

1.5.1.7 There is no duplication of health promotion activities because there is no well-established partnership.

1.5.1.8 There is wastage of resources because there is no strategic partnership the specifies and monitors responsibilities and health promotion activities.

1.5.2 Solutions to bridge the gaps in health promotion partnership

1.5.2.1 Create some partnerships.

1.5.2.2 To improve partnership, we need to have a plan of action at different levels.

1.5.2.3 Having partnerships with governmental sector, non-governmental organizations the private sector is a key area that needs to be strengthened.

1.5.2.4 Partnerships with governmental sector, non-governmental organizations and private sector can be made by having a shared vision with these sectors by making them fully understand their roles and responsibilities.

1.5.2.5 Strategic partnership can be established in a different way by statistics, by explaining to them successful stories of partnership from different countries, by having a shared plan of action, by planning with them, and by developing strategies with them.

1.5.2.6 Establish strategic partnership within the private sector for the social responsibility programmes.

1.5.2.7 Strengthen multi-sectoral collaboration.

1.5.2.8 Develop a comprehensive strategy with all governmental sectors, NGOs and private partners for health promotion.

1.5.2.9 Disseminate health promotion strategies to all partners.

1.5.2.10 Other sectors are committed to doing their jobs in health promotion, and they are committed to improving Oman.

1.5.2.11 Provide technical guidance on how other sectors can do a better job to benefit the health of the people in Oman.

1.5.2.12 If we want to get other sectors involved, our own capacity within the ministry of health on the understanding of health promotion needs to improve.

1.5.2.13 Health promotion strategy is not only for the health sector, so to overcome these gaps, we need to have a proper strategy involving other sectors. The main area is to strengthen the multi-sectoral collaboration

1.5.2.14 Without multi-sectoral collaboration, the health promotion in Oman cannot succeed.
1.5.2.15 More collaboration is required between all organisations to avoid duplication and not to miss any activity or any target group of audience.

1.5.2.16 Build and strengthen the collaboration between other sectors through:
1.5.2.16.1 Developing collaboration with other sectors either within the ministry or with external agencies.
1.5.2.16.2 Establishing effective collaboration with other sectors will prevent the duplication of activities and the missing of any activity.
1.5.2.16.3 To improve partnership, we need to have a plan of action at different levels.
1.5.2.16.4 Having partnership with governmental and non-governmental organizations and the private sector is a key area that needs to be strengthened.
1.5.2.16.5 Developing partnership by having a shared vision with these sectors.
1.5.2.16.6 Create partnership by making governmental and non-governmental organizations and private sectors fully understand their roles and responsibilities.
1.5.2.16.7 By building strategic partnerships with governmental and non-governmental organizations and private sectors.
1.5.2.16.8 By having a shared plan of action, by planning with them and by developing strategies with them.
1.5.2.16.9 Partnership can be established in a different way by explaining the statistical data of how we need this partnership to reduce the epidemic NCDs.
1.5.2.16.10 By showing to other sectors what statistical indicators should they achieve to prevent and control NCDs.
1.5.2.16.11 Developing a partnership by explaining to them successful stories of partnership from different countries.
1.5.2.16.12 Establish strategic partnerships within the private sector for the social responsibility programmes.

1.6 Health Promotion Professional development

1.6.1 Gaps in health promotion professional development
1.6.1.1 The number of experts in health promotion is few at the national level.
1.6.1.2 There are not enough development health promotion professionals, practitioners, researchers and policymakers.
1.6.1.3 There are no sufficient qualified human resources with sufficient skills and knowledge in health promotion to deliver essential health promotion.
1.6.1.4 There are no advanced health promotion education and training programmes in Oman.

1.6.1.5 Although some people are being trained over the last few years and they are aware of the concept of health promotion, still not enough health promotion professionals exist.

1.6.1.6 We have people work in health promotion activity, but these people are not aware about the concept of health promotion and how to use health promotion capacity should it exist at the regional level or wilayat level to improve the health of the people of Oman, and how to connect with other non-health sectors.

1.6.1.7 There are a few people who are aware of it, which means that training is deficient in the area of health promotion.

1.6.1.8 There is no department or unit for health promotion which obviously causes threats that gradually trained people losing interest and the system is going to lose these people who are being trained. When they retire, they go to other disciplines and the concept of health promotion will become more opaque as we go around.

1.6.1.9 Trained people are not aware about the concept of health promotion and how to use health promotion capacity.

1.6.1.10 Trained people are not aware of how health promotion capacity should exist at the regional level or wilayat level to improve the health of the people of Oman.

1.6.1.11 Trained people are not aware of the best ways of how to connect with other non-health sectors to build health promotion capacity.

1.6.2 Solution to bridge the gaps in health promotion professional development

1.6.2.1 There is no health promotion training in Oman.

1.6.2.2 The number of experts in health promotion should be increased at the national level.

1.6.2.3 There are few people who we can call experts in health promotion.

1.6.2.4 Training more people on health promotion will improve the health promotion capacity.

1.6.2.5 Manpower is their but they are not fully oriented because of the lack of awareness about what health promotion is and what are the activities that can be considered as health promotion activities and what skills that can be considered as health promotion skills.

1.6.2.6 Working with our health professionals and raising awareness regarding health promotion concept and interventions will develop professionals that are experts in health promotion.
1.6.2.7 Migration of experts from the interior regions to the major cities, where they have all the facilities and resources and better jobs are available. This reason of lower health promotion professionals in the regions and provinces is that the best experts are in the capital.

1.6.2.8 We have a lot of experts in the country by now who have accomplished a lot of activities but more capacity and professionals are needed.

1.6.2.9 Working with other sectors and developing professionals in health promotion in other sectors will improve the health promotion capacity for NCDs.

1.6.2.10 Now if we seriously want to be able to implement, monitor and strengthen those policies and maybe go into even further detail about those policies, then this not only includes raising awareness in all of that, but working with people within the ministry of health, as well as other sectors in the delivery modes to train them on the health promotion concept.

1.6.2.11 Training people in health promotion strengthens the health promotion capacity.

1.6.2.12 The fact that we are living in the epidemic of NCD in the entire country which means that development of health promotion professionals is required to tackle the problem.

1.6.2.13 Improvement of professional development.

1.6.2.13.1 People are being trained over the last few years and they are aware of the concept of health promotion.

1.6.2.13.2 Pushing the issue of education and developing professionals in our health sector and in other sectors.

1.6.2.13.3 Increase the number of experts in health promotion at the national level.

1.6.2.13.4 Training of more people on health promotion will improve the health promotion capacity.

1.6.2.13.5 Train and orient the existing manpower about what health promotion is and what are the activities that can be considered as health promotion activities and what skills that can be considered as health promotion skills.

1.6.2.13.6 Working with our health professionals and raising awareness of health promotion concept and interventions will develop professionals that are experts in health promotion.

1.6.2.13.7 Prevent migration of the experts from the interior regions to the major cities, which is the cause of lower health promotion professionals from the regions and provinces to the capital.

1.6.2.13.8 More experts and professionals are needed, which means we should train more people.
1.6.2.13.9 Working with other sectors and developing professionals in health promotion in other sectors will improve the health promotion professional development capacity for NCDs.

1.6.2.13.10 Train people within the ministry of health, as well as other sectors in the delivery mode on the health promotion concept.

1.6.2.13.11 People working in health promotion activities should know what is considered worldwide to be health promotion by definition and should be trained on the concept of health promotion.

1.6.2.13.12 Plan how health promotion capacity should exist at the regional level or Wilayat level to improve the health of the people of Oman, and how to connect with other non-health sectors.

1.6.2.13.13 Because Oman has an NCD epidemic, health promotion professionals in the area of NCDs should be developed and training is required to tackle the problem.

1.6.2.13.14 Develop a health promotion department or unit for NCDs to be responsible for training more manpower in the field of health promotion for NCDs.

1.6.2.13.15 Retain health promotion staff who are being trained on health promotion by encouragement and rewards to prevent them from retiring early or going to other disciplines.

1.7 Health Promotion information systems

1.7.1 Gaps in health promotion information systems
1.7.1.1 Information and data are not available in too many health problems.

1.7.1.2 The ministry of health is doing frequent surveys every seven/eight years or every ten years but these surveys did not cover health behaviours and lifestyle properly.

1.7.1.3 Because of poor understanding of health promotion.

1.7.1.4 There is little information about understanding what is keeping people from changing behaviours.

1.7.1.5 Information is largely just prevalent information.

1.7.1.6 Information does not go in depth on different aspects of the people’s behaviours which health promotion strategies and activities need to tackle.

1.7.1.7 There are gaps in health promotion information systems because the IT departments are not well developed.

1.7.1.8 IT systems in several organisations have various issues, are too slow, incomplete and missing a lot of pieces.
1.7.1.9 The lack of well-established information systems makes it very difficult to expand the delivery mode.
1.7.1.10 The lack of effective information systems makes it very difficult to advocate that we need financing for these specific issues.
1.7.1.11 There is no effective utilisation of surveys and data.
1.7.1.12 There are no people to utilise the data in terms of analysis of particular domains.
1.7.1.13 There is deficiency in health promotion the research.
1.7.1.14 There is a limitation in the information system as should be a catch up with the technology.
1.7.1.15 It is not strange that there is a gap in information systems.
1.7.1.16 There is a lack of key performance indicators causing low health promotion capacity.
1.7.1.17 The health promotion information system is available and the ministry of health is doing frequent surveys every seven/eight years or every ten years, but there are no people to utilise these data in terms of analysis of particular domains.
1.7.1.18 We do not know what is happening in nutrition in Oman because there is not enough information available.
1.7.1.19 Tobacco control is very lagging because not enough information is available.
1.7.1.20 There are data from 1991 to 2017, which proves that Oman has got a huge NCD epidemic.
1.7.1.21 There is not enough care of people with diabetes with other NCDs because there is deficiency in the information systems and research.
1.7.1.22 Information systems have a gap because there is no infrastructure. For example, there is no department of health promotion at the central level and gaps exist in information systems.
1.7.1.23 Because of poor understanding of health promotion.
1.7.1.24 There is little information about understanding what is keeping people from changing behaviours.
1.7.1.25 Information is largely just prevalent information.
1.7.1.26 Information does not go in depth on different aspects of people behaviours regarding which health promotion strategies and activities need to be tackled.
1.7.1.27 There is a gap in health promotion information systems because of the IT departments.
1.7.1.28 IT systems in several organisations have various issues, are too slow, are incomplete and are missing a lot of pieces.
1.7.1.29 The lack of well-established information systems makes it very difficult to expand the delivery mode.
The lack of effective information systems makes it very difficult to advocate that we need financing for these specific issues.

There is no effective utilisation of surveys and data. There are no people to utilise the data in terms of analysis of particular domains.

There is deficiency in research.

We do not know exactly what is happening in the country and need more information.

**1.7.2 Solutions to bridge the gaps in health promotion information systems**

1.7.2.1 Well-established health promotion information systems are effective in the process of advocation to improve health by pushing the development of policies.

1.7.2.2 We hope the situation becomes better than that at present, but this is our reality. So as this health promotion capacity map shows that the one of the areas in which we are doing not so well is the information systems.

1.7.2.3 Until now, we do not have appropriate tracking mechanisms or systems for the various risk factors, consequences, injuries, diseases and ill health.

1.7.2.4 With regard to health promotion information systems, there is a problem with the IT departments. The problems unfortunately exist in several organisations; they are too slow to develop systems.

1.7.2.5 The defect is in the IT departments and services which cause weakness in health promotion information systems even when the system is available. IT departments have a lot of issues. The system is slow. They are incomplete and missing a lot of pieces. Most of the time, they are not user friendly.

1.7.2.6 Health promotion surveillance for non-communicable diseases should regularly pick up every trend and every change in these diseases.

1.7.2.7 Health promotion research should be improved and more research should be done.

1.7.2.8 We need to gather more research data.

1.7.2.9 It might require more field research to better understand what is going on. It might involve focus group discussions etc.

1.7.2.10 Information systems need to be well developed.

1.7.2.11 Even though we have to do more research and academically that might be good, we do not have the time.

1.7.2.12 NCD is an epidemic, so based on whatever information we have, we should take action to the best of our knowledge, based on international evidence, and through that we can learn how to do better next time.

1.7.2.13 Despite conducting four surveys in 1991, 2000, 2009 and 2017. All these surveys are available. Data are available but we need specific people who can
extract these data and use them for advocacy and improving the health of people of Oman through improving the policies by rectifying the current situation which needs correction in many areas.

1.7.2.14 All the health promotion services directed to NCDs can be improved if information systems are improved.

1.7.2.15 We might already have data amongst our different databases in the country, but we need to look at it to better understand it.

1.7.2.16 It might require more field research to better understand what is going on. It might involve focus group discussions etc.

1.7.2.17 The health sector has this information for some guidance in this area.

1.7.2.18 The data from 1991 to 2017 prove that Oman has a huge NCD epidemic; we need proper advocacy and utilisation of the data for advocacy.

1.7.2.19 Improve health promotion information systems.

1.7.2.19.1 To have appropriate tracking mechanisms or systems for the various risk factors, the consequences, whether they are injuries, diseases, ill health.

1.7.2.19.2 To evaluate and monitor systems.

1.7.2.19.3 Information systems should catch up with technology.

1.7.2.19.4 Conduct regular surveillance for NCDs that pick up every trend and every change in this disease.

1.7.2.19.5 Proper advocacy of the data

1.7.2.19.6 Effective utilisation of the data.

1.7.2.19.7 Professional people to utilise the data in terms of analysis of particular domains.

1.7.2.19.8 Appoint specific people who can extract the data and use it for advocacy and improve the health of people of Oman by improving the policies and rectifying the current situation which needs correction in many areas.

1.8 Health promotion financing

1.8.1 Gaps in health promotion financing

1.8.1.1 Financing is always an issue in many programmes.

1.8.1.2 The ministry of Health does not allocate a specific budget for specific programmes.

1.8.1.3 It is just a big fund, and they tap into this fund as and when required.

1.8.1.4 The current financial crisis is contributing very much to the financing constraints at the moment.

1.8.1.5 Budgeting does not happen. It is not broken down for surveillance, for disease.
1.8.1.6 We have the ministry of health or the government has one budget, and people just implement the budget.
1.8.1.7 There is no system of prioritisation and allocation budget to the most needed areas like health promotion.
1.8.1.8 There are some activities that are not that worthy, but still, we spend a lot of money on them.
1.8.1.9 There is no predetermined money for every activity or programme in the ministry, and that is the way the ministry has been working.
1.8.1.10 The financing issue a bit of an awkward issue in this country.
1.8.1.11 Problems with oil prices in the past few years are one of the main reasons why several programmes were hit hard unfortunately because they were not financed.
1.8.1.12 There is inappropriate distribution of finances and funds that we have within our organisations.
1.8.1.13 Lack of understanding of health promotion will mean decision-makers do not give priority to health financing in this area, which causes gaps in health promotion capacity.

1.8.2 Solutions to bridge the gaps in health promotion financing
1.8.2.1 To have a lined budget for health promotion.
1.8.2.2 Develop an efficient, effective and sustainable management of resources and funds.
1.8.2.3 Organisations should have appropriate distribution of finances and funds.
1.8.2.4 There should be special budget for any programme in Oman.
1.8.2.5 The ministry of finance (government) should know that if they work and if they assign a special budget for control and prevention of NCDs, the economy of Oman in the future will be strengthened and improved.
1.8.2.6 Provide special budget for any programme in Oman.
1.8.2.7 Do not use the ministry of health budget as a whole.
1.8.2.8 Effective and efficient management of the ministry of health budget.
1.8.2.9 Divide the ministry of health budget for programmes and services most in need through effective strategic finance plans.
1.8.2.10 To have a section on financing or ways of financing.
1.8.2.11 Strategy with a proper financing system is required.
Theme 2: General Perception and knowledge about health promotion capacity map to prevent and control NCDs in Oman

2.1 Agree with the findings.
2.2 It represents the health promotion capacity in Oman at present.
2.3 The finding of the health promotion capacity map describes the situation of health promotion in Oman right now.
2.4 The health promotion capacity map is the present reality of Oman in this area.
2.5 The health promotion map is very good.
2.6 The health promotion map is unique.
2.7 This health promotion map has been made for the first time for Oman.
2.8 We have seen the health promotion map theoretically in many other papers. However, good to see it for the first time for Oman.
2.9 The health promotion map will contribute to educating the policymakers, health promotion workers and perhaps the general public about Oman’s capacity and where the challenges lie.
2.10 Oman is facing a lot of challenges and problems to implement health promotion.
2.11 There are many policies, plans, strategies, programmes, core of expertise, collaboration, partnership and professional development interventions which have not been evaluated.
2.12 The parameters the Oman health promotion capacity map are applicable to so many fields in the health sector and not only to NCDs.
2.13 The health promotion capacity map is showing that some work has begun in some areas of health promotion in the country, and other areas where we have barely begun.
2.14 The health promotion capacity map gives a good picture and a good reflection of what is happening in the country.
2.15 I am 100% sure that yes, in these three areas of gaps in health promotion capacity, we are having real challenges (programme delivery, information systems and health promotion financing).

2.16 Agree that there is low health promotion capacity to prevent and control NCDs in the regions and provinces.

2.17 Causes of the low health promotion capacity to prevent and control NCDs in the regions and wilayats.

2.17.1 The number of experts in health promotion is few at the national level.

2.17.2 There is no central unit the has the roles and responsibilities to build the capacities in health promotion because of lack of capacity building activities for these people.

2.17.3 The major concern is the clinical part of NCD, rather than the promotive part.

2.17.4 Because of concentration of services and improving those services at national level.

2.17.5 Because in proper decentralisation system, which is used now in Oman, the authority for regions and Wilayats to improve their services was not given properly under strategic plans.

2.17.6 The concentration in the Wilayats is on the curative part of NCDs.

2.17.7 One reason is that the best experts are in the capital.

2.17.8 All the resources, whether financial, physical or otherwise, are being invested only in the capital or the main cities.

2.17.9 Leaders tend to neglect and forget about the smaller cities and villages.

2.17.10 There is the migration of experts from the interior regions to the major cities, where they have all the facilities and resources and better jobs are available.

2.17.11 Lower health promotion capacity in regions and provinces are mainly attributed to the fact there is no infrastructure.

2.17.12 Lower health promotion capacity in regions and provinces because there is no department of health promotion at the central level.
2.17.13 Because there is no department in the central office or the ministry of health for health promotion, and there are no departments in the regions also.

2.18 It is a common problem in several countries to have lower health promotion capacity in regions and provinces.

2.19 The capitals are usually performing excellently, whereas the other regions are not doing that well.

2.20 Trained people are not very aware about the concept of health promotion and how to use health promotion capacity.

2.21 Trained people are not very aware of how health promotion capacity should exist at the regional level or wilayat level to improve the health of the people of Oman.

2.22 Trained people are not very aware of how to connect with other non-health sectors to build health promotion capacity.

**Theme 3: Gaps in health promotion capacity in Oman**

2.23 Gap areas in the existing health promotion capacity are highest in:

2.23.1 Health promotion programme delivery

2.23.1.1 There is no approved strategy cause

2.23.1.2 There is deficiency in the monitoring of health promotion programmes cause gap in health promotion capacity in Oman.

2.23.1.3 Tobacco control for example is lagging behind.

2.23.1.4 There is no basic understanding of what is happening in the country regarding diet, physical activity and tobacco use. Do not know what is happening in the country regarding nutrition. We do not know what is happening regarding nutrition in Oman, despite having four surveys in 1991, 2000, 2009 and 2017.

2.23.1.5 Care of people with diabetes with other NCDs is lagging.

2.23.1.6 Health education strategy only is not effective enough to change behaviours or to improve NCD prevention and control.

2.23.2 Gap in Information systems
2.23.2.1 Because of poor understanding of health promotion.
2.23.2.2 Have little information regarding understanding what is keeping people from changing behaviours.
2.23.2.3 Information is largely just prevalent information.
2.23.2.4 Information does not go in depth on different aspects of the people behaviour regarding which health promotion strategies and activities need to be tackled.
2.23.2.5 There are gaps in health promotion information systems because the IT departments are not well developed.
2.23.2.6 IT systems in several organisations have lot of issues, are too slow to develop systems, are incomplete and are missing a lot of pieces.
2.23.2.7 The lack of well-established information systems makes it very difficult to expand the delivery mode.
2.23.2.8 The lack of effective information systems makes it very difficult to advocate that we need financing for these specific issues.
2.23.2.9 There is no effective utilisation of surveys and data. There are no people to utilise the data in terms of analysis of particular domains.
2.23.2.10 There is deficiency in the research.

2.23.3 Health promotion financing
2.23.3.1 Financing is always an issue in many programmes.
2.23.3.2 The Ministry of Health does not allocate a specific budget for specific programmes.
2.23.3.3 It is just a big fund, and they tap into this fund as and when required.
2.23.3.4 The current financial crisis is contributing very much to the financing constraints at the moment.
2.23.3.5 Budgeting does not happen. It is not broken down for surveillance of diseases.
2.23.3.6 We have the ministry of health or the government has one budget, and people just implement.
2.23.3.7 There is no system of prioritisation and allocation of budget to the most needed areas like health promotion.

2.23.3.8 There are some activities that are not that worthy, but still we spend a lot of money on them.

2.23.3.9 There is no predetermined money for every activity or programme in the ministry, and that is the way the ministry has been working.

2.23.3.10 The financing issue is a bit of an awkward issue in this country.

2.23.3.11 Problems with oil prices in the past few years is one of the main reasons why several programmes were hit hard unfortunately because they were not financed.

2.23.3.12 There is inappropriate distribution of finances and funds that we have within our organisations.

2.23.3.13 Lack of understanding of health promotion will mean that decision-makers do not give priority to health financing in this area, which causes the gaps in health promotion capacity.

2.23.4 Lack of monitoring and evaluation of health promotion to follow and evaluate the impact of health promotion capacity map domains according to the stage of development

2.23.4.1 Lack of monitoring and evaluation of health promotion policies, plans, strategies and programmes.

2.23.4.2 Lack of monitoring and evaluation of health promotion core of expertise.

2.23.4.3 Lack of monitoring and evaluation of health promotion collaborative mechanism.

2.23.4.4 Lack of monitoring and evaluation of health promotion programme delivery.

2.23.4.5 Lack of monitoring and evaluation of health promotion partnership.

2.23.4.6 Lack of monitoring and evaluation of health promotion professional development.

2.23.4.7 Lack of monitoring and evaluation of health promotion information systems.

2.23.4.8 Lack of monitoring and evaluation of health promotion financing.
Theme 4: Suggestions to the government support in improving Health Promotion Capacity for NCDs

2.24 Adopting a plan of action by the council of ministries is needed.
2.25 To allocate financial resources to the plan of action.
2.26 To involve other sectors in the implementation.
2.27 To have a higher body for implementation of the plan of action.
2.28 To have a framework for monitoring and evaluation.
2.29 To formulate an independent authority to prevent and control non-communicable diseases.
2.30 To formulate an institution for public health or for health promotion.
2.31 The higher committee of non-communicable diseases should be represented by a higher level of authorities.
2.32 More collaboration between all the organisations is needed to avoid duplication and not to miss any activity or any target group of audience.
2.33 Concentrate on developing our human resources.
2.34 Establish an infrastructure of a department for health promotion and support it.
2.35 Financial support for the established health promotion department.
2.36 Policy and plan of action of health promotion for NCD has to come from higher government entities, either from the supreme council, from the ministerial council or even higher.
2.37 Other sectors can focus their resources and their capacity to do something.
2.38 A government mandate to the other sectors to build their health promotion capacity to prevent NCDs.

2.39 High level of government commitment.