NUI Galway
OÉ Gaillimh

ARAN - Access to Research at NUI Galway

Provided by the author(s) and NUI Galway in accordance with publisher policies. Please cite the published version when available.

Title	The influence of nursing home residency on the capacities of low-dependency older adults
Publication Date	2008-10-14
Publication Information	Walsh, K., Waldmann, T. (2008) 'The influence of nursing home residency on the capacities of low-dependency older adults'. Ageing & Mental Health, 12 (5):528-535.
Publisher	Taylor & Francis
Link to publisher's version	http://dx.doi.org/10.1080/13607860802341104
Item record	http://hdl.handle.net/10379/3195
DOI	http://dx.doi.org/10.1080/13607860802341104

Downloaded 2019-10-18T02:22:36Z

Some rights reserved. For more information, please see the item record link above.

This article was downloaded by: *[National University of Ireland Galway]*
On: *26 November 2008*
Access details: *Access Details: [subscription number 785026925]*
Publisher *Routledge*
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK

Aging & Mental Health
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713404778

The influence of nursing home residency on the capacities of low-dependency older adults

Kieran M. Walsh [a]; Thomas Waldmann [b]
[a] Irish Centre for Social Gerontology, National University of Ireland, Galway, Ireland [b] Manufacturing and Operations Engineering Department, University of Limerick, Ireland

Online Publication Date: 01 September 2008

To cite this Article Walsh, Kieran M. and Waldmann, Thomas(2008)'The influence of nursing home residency on the capacities of low-dependency older adults',Aging & Mental Health,12:5,528 — 535
To link to this Article: DOI: 10.1080/13607860802341104
URL: http://dx.doi.org/10.1080/13607860802341104

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: http://www.informaworld.com/terms-and-conditions-of-access.pdf

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Aging & Mental Health
Vol. 12, No. 5, September 2008, 528–535

Routledge
Taylor & Francis Group

The influence of nursing home residency on the capacities of low-dependency older adults

Kieran M. Walsh[a]* and Thomas Waldmann[b]

[a]*Irish Centre for Social Gerontology, National University of Ireland, Galway, Ireland;* [b]*Manufacturing and Operations Engineering Department, University of Limerick, Ireland*

(*Received 30 December 2006; final version received 3 November 2007*)

Objective: With the growing number of low-dependency older adults in long-stay care and the lack of categorisation of these institutions in the Republic of Ireland, it can be asked if such facilities are truly beneficial. This paper presents an explorative investigation of the influence of the nursing home environment on the capacities of low-dependency older adults.
Method: The participants consisted of 50 community residents, as a control group, and 50 nursing home residents ranging in age from 65 to 95 years. The methodology was based on a triangulation of three data sources: a battery of cognitive, sensory, sensorimotor and psychological well-being assessments; a semi-structured participant interview; and an institutional questionnaire. Cluster analysis was then used to identify natural performance groupings within the assessment battery data.
Results: There were two performance groupings within the dataset. Interestingly, two community residents were grouped with the majority of nursing home residents and six nursing home residents were grouped with the majority of community residents. The interpretation of the results was informed by the semi-structured interviews and the institutional questionnaires.
Conclusion: Although causality cannot be attributed, findings indicate an association between the nursing home environment and the capacities of older adult residents.

Keywords: nursing home environment; older adult capacities; autonomy; peer networks

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

Introduction

Since the 1990s, the number of older adults entering nursing home facilities has steadily declined across Europe and North America. Countries such as the UK, Sweden, Netherlands and United States have looked to other forms of care, reserving nursing homes for those with the greatest need and dependency (Tomassini, Glaser, Broese van Grenou & Grundy, 2004). This has meant increased emphasis on home care provision and alternative housing facilities, e.g. retirement homes, assisted living units, and sheltered and independent housing (Coleman, 1995; Evans, 1997; Meijer, van Kampen & Kerkstra, 2000). Consequently, distinct categorisations of long-stay care have evolved that cater for residents of each specific dependency level.

While a similar trend is evident in the Republic of Ireland, long-term care provisions for older people are still dependent on an institutional infrastructure. As a result, it is not unusual to find a wide range of older adults, varying in their abilities and conditions, in a single facility. Given that the nature of the environment is likely to be dictated by the nature of the largest group of residents, typically maximum dependency (Long-Stay Activity Statistics, 2005), healthier older adults may suffer. Studies have shown that institutionalisation can decrease psychological well-being (Patel, 2003), increase depression (Jones, Marcantonio, & Rabinowitz, 2003), reduce social interaction (Carpenter, 2002) and autonomy (Dodds, 1996), and increase dependency (Stabell, Eide, Solheim, Solberg, & Rustoen, 2004).

Even though the number of low-dependency residents is thought likely to increase in the coming years (Fahey, 1995), there does not appear to be a strong effort to tackle this apparent problem. Nor has there been an effort to explore the effects of such person–environment incongruence on older adult well-being. Thus it is unclear whether nursing home facilities are a beneficial resource to assist low-dependency older adults, or whether they are a source of further issues that must be resolved.

As part of a larger research study, this paper documents an explorative cluster analysis investigation of nursing home residency and older adult capacities. It is hypothesised that there is an association between the capacities of low-dependency nursing home residents and the institutional environment within which they reside. The study will focus on private nursing homes, as they provide almost 50% of long-stay care beds in the Republic of Ireland, (O'Shea, 2002; Long-stay Activity Statistics, 2005).

Method

Approach and assessment design

The study approach was based on a triangulation of three data sources, incorporating the use of

*Corresponding author. Email: kieran.walsh@nuigalway.ie

ISSN 1360–7863 print/ISSN 1364–6915 online
© 2008 Taylor & Francis
DOI: 10.1080/13607860802341104
http://www.informaworld.com

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

quantitative and qualitative instruments. Using this approach facilitated a cross-reference strategy, which enhanced the evidence-based interpretation of the resulting findings (Jick, 1979). Community residents were included in the sample as a control group, representing 'normative' ability performances.

The first data source consisted of an assessment battery that was used to collect information on cognitive, sensory and sensorimotor capacities and psychological well-being indicators (i.e. self-esteem and depression). The battery, which has been documented in previous studies (Walsh & Waldmann, 2002, 2004), included the following assessments.

- *Vision*: acuity, contrast sensitivity (Freiburg Acuity and Contrast Test, FrACT, Bach, 1996), and near acuity (Pilot Medical Solutions Incorporated).
- *Audition*: air conduction audiometry conducted at the 250, 500, 1000, 2000, 3000, 4000, 6000 and 8000 Hz frequencies.
- *Dexterity*: Fitts Tapping Task (Fitts, 1954; Fitts & Peterson, 1964), incorporating five different target amplitudes. The number of correct target hits and the average movement times (MT) were recorded using a C++ computer program.
- *Attention/reaction*: colour–word and auditory female–male discrimination Stroop tasks (Stroop, 1935). The number of correct responses and mean reaction time (RT) were recorded using E-Prime and Labview 6i computer programs.
- *Memory*: pictures, text and verbal word short-term recognition memory assessments. The number of correct responses and the mean RT were recorded using E-Prime and Labview 6i computer programs.
- *Mental functioning*: information/orientation sub-test of the Clifton Assessment Procedures for the Elderly (CAPE; Pattie & Gilliard, 1979) and the Mini Mental State Exam (MMSE – Folstein, Folstein, & McHugh, 1975).
- *Depression*: 14-item depression sub-scale from the Depression, Anxiety and Stress Scale (DASS; Lovibond & Lovibond, 1995). Assesses dysphoria, hopelessness, devaluation of life, self-depreciation, lack of interest/involvement, anhedonia and inertia.
- *Self-esteem*: Self Esteem Scale (Rosenberg, 1965). Ten-item scale documented as a valid indicator of older adult self-esteem (Fagerstrom, Holst, & Hallberg, 2007; Sarvimäki & Stenbock-Hult, 2000).

Cluster analysis was performed to identify naturally occurring groups (or clusters) within the data gathered from the assessment battery. Cluster analysis is an exploratory data analysis tool used to investigate interrelationships among the data points to assess their structure. Cases are clustered on the basis of maximising the association or similarity within a cluster. While cluster analysis does not provide an explanation for the structure, it has been used for pattern analysis, decision-making, goodness-of-fit and grouping in a wide range of disciplines (Jain, Murty, & Flynn, 1999; Statsoft, 2004).

The second data-source was a semi-structured interview. The interview was used to inform the interpretation of the performance groupings shown in the cluster analysis. Aside from questions on biographical information (age, illnesses, education, occupation, reason for nursing home admission and length of institutionalisation), the interview was based on an agenda of topics that included (1) *activities and hobbies before and after retirement*, (2) *support from family and friends* and (3) *isolation before and after retirement*. The direction of the conversation was allowed to follow the narrative of the participants in reference to their past experiences and daily life. This strategy provided a background and context to the individuals' situation that would have been overlooked with a set questions and answers dialogue.

The third data source was an institutional questionnaire, which was used to collect information on the participating nursing homes. This instrument allowed for a comparison of the institutions and helped to contextualise the participants' residential circumstances. The data included institution size, staffing, resident dependency levels, segregation of living quarters, flexibility of daily routine and services provided. The topics of interest stemmed from observations made by Nussbaum (1993) and Ice (2002) concerning the attributes of the nursing home environment. Similar information was not collected for the neighbourhoods of the community residents, because of the dispersed and numerous locations of the participants.

Participants

The community residents comprised 50 individuals (numbered as 1–50 in analysis) ranging in age from 65 to 80 years with a mean age of 71.4 years and a standard deviation (SD) of 4.3. The group included 16 males and 34 females. From an initial sample of 72 low-dependency nursing home residents, 50 older adults (numbered as 51–100 in analysis) completed the interview and assessments. These individuals came from 17 different nursing homes and ranged in age from 65 years to 95 years with a mean age of 80.1 years and an SD of 7.3. There were 15 males and 35 females in the group.

Sampling

The community residents were recruited through community and active retirement groups, which were identified using the regional Social Service Council. Information sheets were distributed to each potential

participant and a request for participation was made through informed consent.

To recruit nursing home residents, an information pack was sent to 45 registered nursing homes in the region. This detailed the aim and methods of the research. The pack also included the criteria for participation, which were based on those used by Jobe et al. (2001) and consisted of the following:

(1) Sixty-five years of age or over.
(2) Have not experienced substantial cognitive decline.
(3) Have not experienced substantial functional decline that would alter behaviour or prove debilitating to the person during the course of the study.
(4) Must not suffer from medical conditions that result in the above.
(5) Must not suffer from severe sensory losses that would prevent participation.
(6) Must not possess substantial communicative difficulties.

Fulfilment of these criteria was decided by the director of nursing, or the medical director of the institution. Given their clinical training and in-depth knowledge of the residents, this helped to ensure appropriate sampling of low-dependency residents. Voluntary participation was then requested through a process of informed consent (i.e. information sheet and consent form).

Statistical procedure

To prepare the data for the cluster analysis, a factor analysis was conducted on the assessment battery data for all 100 participants. Factor analysis produces non-correlated factors. These can be used to create clearer cluster membership, because they are not confounded by correlations between individual variables. The factor solution consisted of a one-factor matrix, suggesting a general functionality indicator. The case loadings of the factor were standardised into *z*-scores and used as objects in a hierarchical cluster analysis (HCA). HCA (clusters formed in stages) was employed because it is recommended for samples of less than 250 cases (Garson, 2007). Euclidean distance was used as a measure of distance, or similarity, between clusters. The analysis was repeated with three different clustering methods (single linkage–nearest neighbour, complete linkage–furthest neighbour and between groups linkage–average linkage) to identify the clearest solution. The output of the analysis consisted of an agglomeration schedule (a tabulated record of the clustering stages) and a hierarchical tree plot (dendrogram diagram). The objective was to obtain a solution with consistent case (participant) distance coefficients up to a sudden gap, marking a distinct set of clusters.

Results

Participating nursing homes

The 17 participating nursing homes are denoted NH1–NH17. NH1 included an independent section for low-dependency residents and a dependent section. Although, only the dependent section was registered as a nursing home, low-dependency residents still received meals and assistance and mixed with the more dependent residents. The remaining 16 institutions classified themselves as nursing homes. However, convalescent residents were catered for when the opportunity arose. Table 1 presents the details of each nursing home including size, staffing, resident dependency levels, domiciliary organisation, flexibility of daily routine and services provided. It was noted that the provision of activities and services depended on the interest of the residents in partaking.

Table 1. Details of participating nursing homes.

	Nursing home																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Beds	47	62	45	24	25	32	45	57	28	26	46	39	38	22	37	23	25
Segregated by dependency	•														•		•
Single rooms	•	•	•	•		•		•	•	•	•	•	•		•	•	•
Twin rooms					•		•							•			
No. of staff	44	NA	29	30	22	23	33	50	18	24	43	40	46	20	22	10	31
No. of low-dependency residents[a]	16	1	8	2	2	3	5	40	4	0	NA	4	6	5	3	2	5
No. of medium-dependency residents	0	0	7	9	5	4	15	8	6	2	NA	5	7	4	0	8	7
No. of high-dependency residents	29	7	16	4	9	18	13	6	10	11	NA	0	11	5	0	2	6
No. of maximum-dependency residents	0	54	8	0	9	1	6	1	8	13	NA	30	14	8	10	0	7
No. of residents participating in study	7	1	2	3	2	3	3	3	6	4	4	2	1	3	3	1	2
Schedule flexibility	■	x	■	x	■	▲	■	■	x	x	■	x	x	▲	■	x	x
Services provided[b]	5	1	4	0	9	3	2	6	3	5	3	2	5	7	5	2	4

NA = Not available. • = Room type provided by nursing home. **x** = Set schedule with no flexibility. ■ = Schedule with some flexibility. ▲ = Very flexible schedule. [a]These figures include temporary convalescent residents. [b]Services offered include: aromatherapy; cards/bingo; chiropody; exercise; massage therapy; music; painting; physiotherapy; reflexology; reminiscence therapy; social outings.

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

Cluster analysis results

The between-groups linkage[1] method provided the clearest solution, which is presented in the form of a hierarchical tree plot in Figure 1. The *x*-axis represents the distance between clusters and the *y*-axis denotes case or participant number. The dotted heavy line illustrates that the largest distance gap in the dendrogram comes after the designation of two clusters. The agglomeration schedule (not presented because of limited space) confirmed the two-cluster structure. Therefore a two-cluster (marked as cluster 1 and 2 in the hierarchical tree plot) solution was chosen to represent the performances in the assessment battery. Table 2 lists the number of nursing home residents and community residents in cluster 1 and cluster 2.

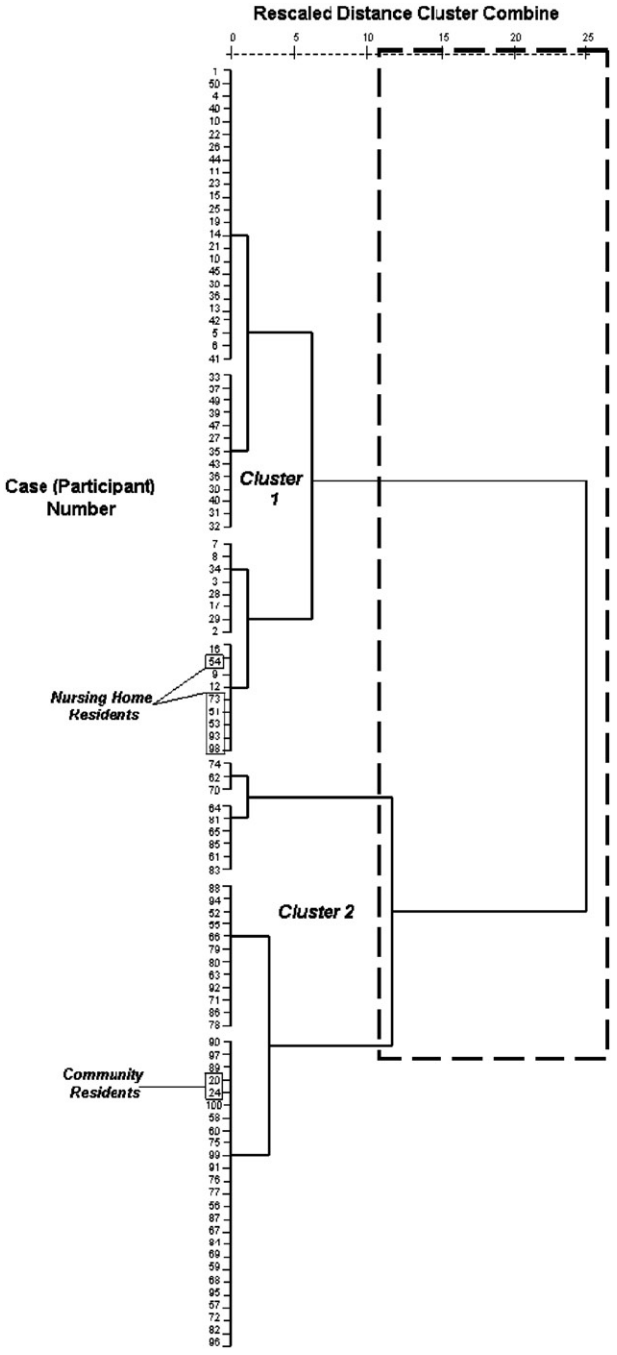

Figure 1. Hierarchical tree plot using between groups linkage clustering method.

Table 2. Breakdown of nursing home and community residents in the two-cluster solution.

	Cluster 1	Cluster 2
Number of nursing home residents	6	44
Number of community residents	48	2
Total cases	54	46

As evident from Figure 1 and Table 2, the analysis identified eight individuals whose assessment scores placed them in clusters that were contrary to their cohort membership. Six nursing home residents (participants 51, 53, 54, 73, 93 and 98) were grouped with the majority of community residents ($n = 48$) in cluster 1. Two of the community residents (participants 20 and 24) were grouped with the majority of nursing home residents ($n = 44$) in cluster 2. These individuals were denoted as 'unexpected members' of these clusters.

Unexpected members: community residents

Participant 20 (Mrs A) was a 73-year-old woman who was widowed with five daughters. Mrs A obtained primary and technical training education and worked as an electronic factory operative. Although Mrs A had an active social life, sufficient support and did not feel isolated, she was susceptible to feelings of depression and nervousness. The participant suffered from an overactive thyroid gland, which she said compromised her eyesight. Mrs A did not complete the auditory memory and attention assessments as she was not confident in her hearing.

Participant 24 (Mrs B) was a 70-year-old woman, who was widowed with a family. Mrs B worked as a foodstuff factory operative after receiving primary and technical training education. Mrs B did not feel isolated or unsupported. Mrs B was noticeably anxious, which was reflected in the fact that she cancelled the interview three times before finally attending. Whether a product of the interview itself, or a trait characteristic, this anxiousness may have affected Mrs B's scores.

Unexpected members: nursing home residents

Participant 51 (Ms C) was an 89-year-old woman, who did not marry and resided in NH1. After obtaining a diploma in nursing, the participant worked as a nurse until retirement. Ms C still maintained a high level of independence in running personal errands around the vicinity of the institution. The participant did not feel isolated or that she lacked support. Ms C moved into the institution 12 months previously so as not to be a burden on her relative and because she sometimes felt lonely living alone.

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

Participant 53 (Mrs D) was a 75-year-old woman who was widowed with six children and who resided in NH1. Although the participant suffered some difficulty in mobility, she still managed to be reasonably independent within the nursing home complex. Mrs D felt that there was more than adequate support from her family. The participant moved into NH1 30 months previously after attempting suicide when her husband died. Mrs D had also attempted suicide while her husband was terminally ill. In the community, Mrs D had some feelings of isolation. In NH1 she did not feel isolated and described the institution as her 'safe haven'.

Participant 54 (Ms E) was an 87-year-old woman who was not married and resided in NH1. Ms E obtained medical training up to postgraduate level and practiced until retirement. Although the participant wore a hearing aid in both ears, Ms E still drove a car and went out daily on personal business. This included visiting friends and assisting in the 'meals on wheels' voluntary service. Ms E did not feel isolated and felt she had more than sufficient support from friends and family. The participant moved into the institution 30 months previously because her cleaner/cook retired and Ms E did not want to train in someone new.

Participant 73 (Mr F) was an 88-year-old man who was widowed with no family. Mr F resided in NH8. The participant attended national school until the age of 15 and served as a community welfare officer up to retirement. Even though Mr F suffered from heart problems, he still drove a car on a daily basis. Mr F did not feel isolated and felt that he had sufficient support. Mr F moved into NH8 42 months previously because he no longer wanted to live alone. At the time of interview, Mr F had recently published his autobiography and was compiling a CD of his poems.

Participant 93 (Mrs G) was a 76-year-old woman who was widowed with no children and resided in NH14. Mrs G received a diploma in nursing and worked as a nurse until getting married. Although the participant suffered from a hiatus hernia and had been recently diagnosed with Parkinson's disease, she was still reasonably mobile within the nursing home complex. Mrs G felt she had adequate support from friends and neighbours and did not feel isolated. The participant had entered the nursing home 18 months previously, after spending a short time in hospital for double vision.

Participant 98 (Mr H) was a 73-year-old man who did not marry. Mr H resided in NH15. The participant had attended national school until the age of 14 and worked as a farmer prior to retirement. Mr H suffered from vertigo, which caused him to retire earlier than he would have liked. This was also the primary reason for entering the institution 6 months previously. The participant did not feel isolated and felt that he had adequate support. Mr H still led an independent life, walking into town daily and travelling on public transport when necessary.

Discussion

The descriptions of Mrs A and Mrs B ('unexpected members' of cluster 2) do not seem unusual. Nevertheless their individual details represent the lower end of the community residents' capacities. This helps to explain their inclusion in cluster 2. Conversely, a reason why the nursing home residents were grouped with the community older adults is more unclear. Reviewing the participant details, their inclusion in cluster 1 appears to be independent of the duration of institutionalisation, reason for institutionalisation, age, gender and to an extent, health status. Therefore the discussion will focus on other factors that may explain the findings of the cluster analysis.

The first of these are the personal characteristics and circumstances of the nursing home residents. In particular, the details of Ms E (participant 54) and Mr F (participant 73) are exceptional, epitomising the postulates of the majority of successful theories of aging (e.g. continuity theory, Atchley, 1989; activity theory, Havighurst, 1963). Specifically, by continuing and developing societal roles of engagement, high levels of independence and functioning can be maintained and even improved through the years of retirement. By contrast though, Mrs D (participant 53) and Mrs G. (participants 93) did not display such obvious capacities for these constructs. Likewise, while the daily endeavours of Ms C (participant 51) and Mr H (participant 98) are endearing in the levels of independence they were able to maintain, they are not, or at least should not be, atypical. The true interaction between personal characteristics and individual circumstances, and their resulting influence on the performances in the assessment battery, is not quantifiable within the scope of this study. Consequently, their potential influence is acknowledged, but a more unifying reason for the cluster analysis findings will be sought.

A second factor is education. Ms C, Ms E and Mrs G attained educational qualifications that represented the higher end of the academic range in the total sample of older adult participants. This would suggest that the inclusion of the nursing home residents in cluster 1 was a consequence of the education levels of the participants. However, Mrs D, Mr F and Mr H possessed standards of education that were representative of the lower (Mr F and Mr H) to average (Mrs D) levels in the nursing home sample. In addition a further 11.4% of the nursing home residents, who remained with the institutionalised group, obtained qualifications that were comparable to those of Ms C and Mrs G. Therefore although education may contribute to the explanation, it is not the sole source of these unexpected memberships.

The final factor is the environment within which the nursing home residents resided. The six participants lived in four different institutions. NH1 was located in a town and was home to Ms C, Mrs D and Ms E. As described, the facility encompassed

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

a dependent and an independent section. There were 16 residents in the independent wing with an additional number of people receiving respite care. This collection of residents, with similar levels of capability and dependency, ensured that there were sufficient opportunities for peer communication and engagement. Furthermore, the residents were consulted about their care programme and daily meals, and encouraged to be involved with the local community. The institution had a daily routine with some flexibility and provided five services (see Table 1). NH8 was located in a town and was the residence of Mr F. The facility catered for 15 individuals with medium to maximum levels of dependency and 40 low-dependency residents (consisting of permanent and convalescent clients). This meant that there was a substantial group of people who could rely on each other for conversation and contribution to activities and events. The independent and mobile individuals frequently visited the town for personal errands and recreational activities. To facilitate these excursions, and the general preferences of residents, the facility was run on a schedule with some flexibility. Six services were provided to the clients. NH14 was occupied by Mrs G and was located on the bounds of a large town. The nursing home catered for 22 clients, with five low-dependency residents. The institution was run on a schedule with a very high degree of flexibility to ensure that the residents' activities were not compromised. Seven services were offered to the clients. These provisions facilitated independence within the home, which afforded and encouraged engagement and intra-group communication. NH15 was home to Mr H and was located in a large town. There were 13 permanent residents with the remaining beds being filled on a transitory basis by convalescent and respite clients. Three residents were categorised as low-dependency. NH15 was a converted manor house, which gave the impression of warmth and homeliness that was not compromised by stringent health and safety regulations. The independent day room allowed the low-dependency residents to gather with the convalescent/clients to chat and take part in different activities. Along with five services and a schedule that allowed for some flexibility, the homely atmosphere appeared to foster engagement and independence.

There are several attributes common across the four facilities. All of the nursing homes displayed flexibility in the structure of their schedules. Independence was encouraged within the environments of each facility. All institutions provided a large number of services, including rehabilitative programmes and recreational activities. This represented the upper bound of service delivery in the participating nursing homes.

These institutional characteristics can be equated to an individualised care approach, and have been shown to enhance feelings of autonomy, psychological well-being, independence, motivation and engagement, (Hillerås, Jorm, Herlitz, & Winblad, 1999; Langer, 1979; Miller 1985; Nolan, 2001; O'Connor & Vallerand, 1993). In a 2003 'Age & Opportunity' study of long-stay care, being involved in meaningful activity was found to positively contribute to quality of life for residents. Conversely, loss of control, choice and functional competence were identified as negatively impacting on occupants. Furthermore all sources of activity, including productive, social and physical, have been linked to functionality and reduced mortality (Glass, Mendes de Leon, Martolli, & Berkman, 1999; Menec, 2003). The structure of these nursing home environments can also be related to the concept of constructive risk. This conception refers to the recognition that, while there is a degree of risk in certain activities, it may be beneficial to encourage such pursuits given the sizable benefits in autonomy and self-efficacy (Waring, 2000).

Perhaps most convincingly, each facility possessed an integral balance between independent residents and higher dependency clients. Out of the 17 institutions that participated in this study, these four nursing homes had the highest proportion of low-dependency residents (NH1, 36%; NH8, 73%; NH14, 23%; and NH15, 23%). The importance of social networks for older adult well-being and functionality, within the nursing home and in the external environment, has been documented extensively in the literature (Cohen-Mansfield, Marx, Lipson, & Werner, 1999; Desrosiers, Gosselin, Leclerc, Gaulin, & Trottier, 2000; McKee, Harrison, & Lee, 1999; Steinbach, 1992). In this manner these institutions achieved the difficult equilibrium between autonomy (independence and freedom of choice) and security (safe and secure surroundings). Parmelee and Lawton (1990) viewed this balance as being fundamental to the congruency between a long-stay care facility and its residents.

It is evident from this discussion that the structure of the nursing home environments is the most appropriate explanation for the inclusion of the six residents' performances in cluster 1.

Conclusion

This research does not quantify the causal effects of nursing home environments. The quality of community neighbourhoods was not investigated, and a detailed ethnographic analysis of internal institutional dynamics was not completed. Consequently, because of these limitations, the participant sample size and the nature of the statistical analysis, this study can only be viewed as an exploratory investigation and as a foundation for future research. However, the multidimensional basis of the cluster analysis, and its triangulation with the interview and questionnaire data, has provided some interesting findings. The research suggests that there is a positive association between the quantitative capacities of nursing home residents and the qualitative and service-orientated aspects of the nursing home environment. Thus, just as

nursing home institutionalisation may negatively affect older adult well-being, an institution's policies, procedures and environmental structure may positively influence the physical and mental capacities of older adults. Future research is required before the strength of this association can be understood fully.

Acknowledgements

The authors would like to thank the participants of this study for their contribution to the research. They would also like to thank Dr Colm Hackett, the staff and administration of the participating nursing homes, Sister Geraldine Brown and Ethna and Larry Carey for their kind assistance. Finally the authors would like to express their appreciation to Dr Jean Saunders from the Statistical Consulting Unit in the University of Limerick for her guidance.

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008

Note

1. The between-groups linkage method, or *unweighted pair-group average*, calculates the distance between two clusters as the average distance (similarity) between all pairs of objects in the different clusters (Garson, 2007).

References

Age & Opportunity (2003). *Home from home? The views of residents on social gain and quality of life: A study in three care centres for older people*. Dublin, Ireland: Age & Opportunity.

Atchley, R. (1989). A continuity theory of normal aging. *The Gerontological Society of America, 29*, 183–190.

Bach, M. (1996). The 'Freiburg Visual Acuity Test' – Automatic measurement of the visual acuity. *Optometry and Vision Science, 73*, 49–53.

Carpenter, B. (2002). Family, peer, and staff social support in nursing home patients: Contributions to psychological well-being. *The Southern Applied Gerontological Society, 21*, 275–293.

Cohen-Mansfield, J., Marx, M., Lipson, S., & Werner, P. (1999). Predictors of mortality in nursing home residents. *Journal of Clinical Epidemiology, 52*, 273–280.

Coleman, B.J. (1995). European models of long-term care in the home and community. *International Journal of Health Services, 25*, 455–474.

Desrosiers, J., Gosselin, S., Leclerc, G., Gaulin, P., & Trottier, L. (2000). Impact of a specific program focusing on the psychological autonomy and actualization of potential of residents in a long term care unit. *Archives of Gerontology and Geriatrics, 31*, 133–146.

Dodds, S. (1996). Exercising restraint: Autonomy, welfare and elderly patients. *Journal of Medical Ethics, 22*, 160–163.

Evans, L.K. (1997). Trends in aging care in Scotland and Scandinavia. *Journal of Gerontological Nursing, 23*, 32–36.

Fagerstrom, C., Holst, G., & Hallberg, I. (2007). Feeling hindered by health problems and functional capacity at 60 years and above. *Archives of Gerontology and Geriatrics, 44*, 181–201.

Fahey, T. (1995). *Health and social care implications of population ageing in Ireland, 1991–2011*. Dublin: National Council for the Elderly.

Fitts, P.M. (1954). The information capacity of the human motor system in controlling the amplitude of movement. *Journal of Experimental Psychology, 47*, 381–391.

Fitts, P.M., & Peterson, J.R. (1964). Information capacity of discrete motor responses. *Journal of Experimental Psychology, 67*, 381–391.

Folstein, M.F., Folstein, S.E., & McHugh, P.R. (1975). 'Mini Mental State': A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research, 12*, 189–198.

Garson, D.G. (2007). *Guidelines for cluster analysis*. Retrieved October 15, 2007, from http://www2.chass.ncsu.edu/garson/pa765/cluster.htm

Glass, T., Mendes de Leon, C., Marottoli, R., & Berkman, L. (1999). Population based study of social and productive activities as predictors of survival among elderly Americans. *British Medical Journal, 319*, 478–483.

Havighurst, R.J. (1963). Successful aging. In R. Williams, C. Tibbits, & W. Donahue (Eds.), *Process of aging* (pp. 299–320). New York: Atherton.

Hillerås, P.K., Jorm, A.F., Herlitz, A., & Winblad, B. (1999). Activity patterns in very old people: A survey of cognitively intact subjects aged 90 years or older. *British Geriatrics Society, 28*, 147–152.

Ice, G.H. (2002). Daily life in a nursing home: Has it changed in 25 years?. *Journal of Aging Studies, 16*, 345–359.

Jain, A.K., Murty, M.N., & Flynn, P.J. (1999). Data clustering: A review. *ACM Computing Surveys, 31*, 264–323.

Jick, T. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*, 602–611.

Jobe, J.B., Ball, K., Marsiske, M., Rebok, G.W., Helmers, K.F., & Kleinman, K. (2001). ACTIVE: A cognitive intervention trial to promote independence in older adults. *Controlled Clinical Trials, 22*, 453–479.

Jones, R., Marcantonio, E., & Rabinowitz, T. (2003). Prevalence and correlates of recognized depression in U.S. Nursing homes. *American Geriatrics Society, 51*, 1404–1409.

Langer, E.J. (1979). Environmental determinants of memory improvement in late adulthood. *Journal of Personality and Social Psychology, 37*, 2003–2013.

Long-Stay Activity Statistics (2005). The Information management Unit, Department of Health and Children.

Lovibond, P., & Lovibond, S. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the Beck depression and anxiety inventories. *Behavior Research and Therapy, 33*, 335–343.

McKee, K.J., Harrison, G., & Lee, K. (1999). Activity, friendships and wellbeing in residential settings for older people. *Aging & Mental Health, 3*, 143–152.

Meijer, A., van Campen, C., & Kerkstra, A. (2000). A comparative study of the financing, provision and quality of care in nursing homes. The approach of four European countries: Belgium, Denmark, Germany and the Netherlands. *Journal of Advanced Nursing, 32*, 554–561.

Menec, V.H. (2003). The relation between everyday activities and successful aging: A 6-year longitudinal study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 58*, S74–S82.

Miller, A. (1985). A study of the dependency of elderly patients in wards using different methods of nursing care. *Age and Ageing, 14*, 132–138.

Nolan, M. (2001). Successful ageing: Keeping the 'person' in person-centred care. *British Journal of Nursing, 10*, 450–454.

Nussbaum, J.F. (1993). The communicative impact of instituionalization for the elderly: The admissions process. *Journal of Aging Studies, 7*, 237–246.

O'Connor, B.P., & Vallerand, R.J. (1993). Motivation, self-determination, and person-environment fit as predictors of psychological adjustment among nursing home residents. *Psychology and Aging, 9*, 189–194.

O'Shea, E. (2002). *Review of the nursing home subvention scheme*. Galway: National University of Ireland.

Parmelee, P.A., & Lawton, P.M. (1990). The design of special environments for the aged. In J.E. Birren, & K.W. Schaie (Eds.), *Handbook of the psychology of aging* (pp. 464–488). London: Academic Press.

Patel, M. (2003). Death anxiety and psychological well-being among institutionalized and non-institutionalized aged. *Journal of Personality & Clinical Studies, 19*, 107–111.

Pattie, A., & Gilleard, C. (1979). *Manual of the Clifton assessment procedures for the elderly (CAPE)*. Sevenoaks: Hodder and Stoughton.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Sarvimäki, A., & Stenbock-Hult, B. (2000). Quality of life in old age described as a sense of well-being, meaning and value. *Journal of Advanced Nursing, 32*, 1025–1033.

Stabell, A., Eide, H., Solheim, G., Solberg, K., & Rustoen, T. (2004). Nursing home residents' dependence and independence. *Journal of Clinical Nursing, 13*, 677–686.

Statsoft Statistics Guidelines (2004). Retrieved December 10, 2006 from http://www.statsoft.nl/textbook/stathome.html

Steinbach, U. (1992). Social networks, institutionalization, and mortality among elderly people in the United States. *Journal of Gerontology, 47*, 183–190.

Stroop, J.R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology, 28*, 643–662.

Tomassini, C., Glaser, K., Broese van Groenou, M., & Grundy, E. (2004). Living arrangements among older people: An overview of trends in Europe and the USA. *Population Trends, 115*, 24–34.

Walsh, K., & Waldmann, T. (2002). Capability thresholds to assist in interface design for the elderly. In S. Bagnara, S. Pozzi, A. Rizzo, & P. Wright (Eds.), Proceedings of the 11th European Conference on Cognitive Ergonomics 2002, (pp. 265–273). Catania, Sicily, September 8–13, 2002.

Walsh, K., & Waldmann, T. (2004). Ability effects and institutionalisation. In Proceedings of 10th Cognitive Aging Conference (p. 125). Atlanta, GA, April 1–4, 2004.

Waring, A. (2000). Constructive risk in the care of the older adult: A concept analysis. *British Journal of Nursing, 9*, 916–924.

Downloaded By: [National University of Ireland Galway] At: 18:24 26 November 2008