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**DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF A  
SCALE TO ASSESS SEXUAL DIFFICULTIES IN GAY MEN**

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BA (Hons)**

Thesis submitted to the National University of Ireland, Galway in fulfilment  
of the requirements for the Degree of Doctor of Philosophy (Psychology)

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December 2013

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In loving memory of my father



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### **Publications & Conference Presentations**

Detailed below are works, stemming from this thesis, that are “in press,” have been submitted for publication, or have been presented at conferences.

#### **Publications**

McDonagh, L. K., Bishop, C., Brockman, M., & Morrison, T. G. (in press). A systematic review of sexual dysfunction measures for gay men: How do current measures, measure up? *Journal of Homosexuality*.

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**Abstract**

A sexual difficulty or dysfunction has been defined as the disturbance or inadequacy of normal sexual responding (Rowland, 2007). The Diagnostic and Statistical Manual for Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013) classifies sexual dysfunctions in accordance with the dimensions involved in a functional sexual response (desire, arousal, and orgasm). The purpose of the present research was to develop a psychometrically sound questionnaire that addresses outstanding empirical issues in sexual functioning literature, and, in so doing, improve understanding of sexual difficulties among gay men. To ensure that a nuanced understanding of male sexual functioning informed the scale development process, the combined use of qualitative and quantitative research methods was employed. Interpretations and experiences of sexual difficulties were explored through interviews and focus group discussions, and the resultant male conversation surrounding key emergent themes informed the generation of items. Based on a review of pertinent literature and feedback from experts in the area as well as from potential research participants, scale items were iteratively analysed. The outcome was two item pools; the first measuring physical sexual difficulties, the second measuring psychological sexual difficulties. Exploratory and confirmatory factor analyses, reliability analyses, and tests of validity (e.g., convergent, discriminant, and known-groups) were subsequently conducted, offering support for the psychometric soundness of the Gay Sexual Difficulties Scale. Finally, the limitations of this research and directions for future research were outlined.



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**List of Abbreviations**

AIC	Akaike Information Criterion
ASEX	Arizona Sexual Experience Scale
BE	Body Embarrassment Subscale
BSFI	Brief Male Sexual Function Inventory
BSFQ	Brief Sexual Function Questionnaire for Men
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
DISF-SR	Derogatis Interview for Sexual Functioning-Self Report
DSFI	Derogatis Sexual Functioning Inventory
ED	Erectile Difficulties Subscale
EFA	Exploratory Factor Analysis
FD	Foreskin Difficulties Subscale
FSHQ	Florida Sexual History Questionnaire
HADS	Hospital and Anxiety Depression Scale
HIV	Human Immunodeficiency Virus
IAD	Insertive Anal Difficulties Subscale
IIEF	International Index of Erectile Function
LGBT	Lesbian, Gay, Bisexual and Transgender
LUTS	Lower Urinary Tract Symptoms
M-BISC	Male Body Image Self-Consciousness Scale
MCAR	Missing Completely at Random
MSHQ	Male Sexual Health Questionnaire
MSM	Men who have sex with men
PAF	Principal Axis Factoring
PCA	Principal Components Analysis
PPS	Perceived Stress Scale
Q	Chi-Square/ <i>df</i> Ratio
RAD	Receptive Anal Difficulties Subscale
R-ADMI	Revised Auburn Differential Masculinity Inventory
RMSEA	Root Mean Square Error of Approximation
GSDS	Gay Sexual Difficulties Scale
SFC	Seminal Fluid Concerns Subscale



## **1. Chapter One**

### **Introducing Male Sexual Difficulties**

#### **1.1 Classifying Sexual Difficulties and Dysfunctions**

Sexual difficulties and dysfunctions have the potential to significantly and negatively impair a man's social and psychological well-being and quality of life (e.g., Althof, 2002; Laumann, Paik, & Rosen, 1999). A sexual difficulty has been defined as any disturbance in normal sexual responding (Rowland, 2007). Normal sexual responding refers to the human sexual response cycle which is the sequence of physiological responses that occur during sexual stimulation (including intercourse and masturbation; Masters & Johnson, 1966). There are four phases: 1) excitement (i.e., the beginning of arousal, signified by an erection in men and vaginal lubrication in women); 2) plateau (i.e., the period of sexual arousal prior to orgasm); 3) orgasm (i.e., ejaculation for men, and orgasm for women); and 4) resolution (i.e., the body returns to an unaroused state; Rathus, Nevid, & Fichner-Rathus, 2009).

The term "sexual dysfunction" refers to a persistent or recurrent disturbance of normal sexual responding and is used to describe sexual difficulties when a clinical diagnosis has been made. There are numerous classification systems employed to define sexual dysfunctions (e.g., Schover, Friedman, Weiler, Heiman, & LoPiccolo, 1982) but the most widely accepted is illustrated in the fifth edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5; American Psychiatric Association, 2013). The DSM-5 classifies sexual dysfunction (specific to each gender) in accordance with the dimensions involved in a functional sexual response (desire, arousal, and orgasm) and, for females only, the occurrence of pain associated with sexual intercourse. The symptoms must be present for a minimum duration of six months, occur during almost all (i.e., approximately 75%-100%) sexual activity, and cause significant distress for the individual. The severity of the dysfunction can be classified as: 1) mild; 2) moderate; or 3) severe. The extent of sexual dysfunctions can be further characterised as: 1) situational (i.e., restricted to certain partners and situations) or generalised (i.e., occurring across all situations and with all partners); and 2) as lifelong or acquired (APA, 2013). As the focus of this thesis is on male sexual functioning, only difficulties relevant to men will be discussed.

**1.1.1 Erectile Disorder.** The fundamental feature of erectile disorder (formerly known as erectile dysfunction [DSM-IV-TR, APA, 2000]) is the recurring failure to obtain or maintain erections during sexual activity (APA, 2013). Much of the research conducted into the area of sexual dysfunctions has focused on erectile difficulties with the majority of studies concentrating on prevalence rates (e.g., Heiman, 2002; Laumann et al., 1999; Simons & Carey, 2001). Erectile difficulties have been found to have a considerable adverse influence on one's quality of life and psychological health (e.g., Althof, 2002; Laumann et al., 1999)<sup>1</sup>.

**1.1.2 Delayed Ejaculation.** The essential feature of delayed ejaculation is a constant delay in or inability to ejaculate despite the (apparent) presence of adequate desire, arousal, and stimulation (APA, 2013). There is no specific time frame for the delay, as there is no clear consensus as to what constitutes a reasonable time to reach orgasm (APA, 2013). Men may report prolonged thrusting to reach orgasm, which can result in exhaustion or genital discomfort.

**1.1.3 Premature (Early) Ejaculation.** Premature ejaculation is manifested by a persistent or recurrent pattern of ejaculation occurring “within approximately one minute following vaginal penetration” and before the person wishes (APA, 2013, p. 442). An additional note is included in the DSM-5 stating that a diagnosis of premature ejaculation can be applied to individuals engaging in “non-vaginal sexual activities;” however, a specific time-frame has not been established for non-vaginal sex.

**1.1.4 Male Hypoactive Sexual Desire Disorder.** Male hypoactive sexual desire disorder is characterised by the persistent absence of sexual/erotic thoughts or fantasies as well as a lack of desire for sexual activity (APA, 2013). Interpersonal factors must be taken into account to ensure the issue is not simply a case of “desire discrepancy” whereby a man has lower sexual desire than his partner. A discrepancy in levels of desire between partners is insufficient to diagnose male hypoactive sexual desire disorder.

**1.1.5 Critique of DSM-5 Classifications.** Several areas of concern regarding the DSM-5 classification of sexual dysfunctions must be noted. First, the anchoring of sexual dysfunctions in the phases of the sexual response cycle is problematic. The various sexual dysfunctions do not occur in isolation and frequently overlap (Balon, 2008; Gierhart, 2006). Due to the interrelatedness of the stages of the sexual response cycle, men with a difficulty related to one phase of the sexual response

cycle will likely exhibit a problem in another phase. For example, nearly one third of men who report difficulties with premature ejaculation also report erectile difficulties (Rowland, 2012).

Second, this classification system dichotomises men into dysfunctional and functional categories (Rowland, 2012) and therefore does not discriminate between a sexual dysfunction (which warrants intervention) and normal variations in sexual function. Changes in lifestyle at a particular point in time (e.g., life stress, interpersonal problems, relationship inequalities) may be overlooked which could result in individuals being labelled as dysfunctional when in fact they may be experiencing typical fluctuations in sexual function (i.e., a sexual difficulty).

## **1.2 Prevalence of Sexual Difficulties**

According to Spector and Carey (1990), sexual difficulties are thought to be amongst the more prevalent disorders in the general population. A review of the relevant literature reveals large discrepancies in prevalence rates of sexual difficulties among the general population. In studies examining heterosexual men, experiences of having at least one sexual difficulty in the previous year vary greatly. Laumann et al. (1999) analysed data collected in 1992 from the National Health and Social Life Survey, a study of sexual behavior in a demographically representative sample of American heterosexual men ( $n = 1410$ ) and women ( $n = 1749$ ) ranging in age from 18 to 59 years. Sexual functioning was measured using seven single items with dichotomous responses (i.e., yes/no). The items related to lack of sexual desire, trouble achieving or maintaining an erection, inability to ejaculate or achieve climax, anxiety about sexual performance, premature ejaculation, pain during intercourse, and not finding sex pleasurable. Thirty-one percent of the male participants had experienced at least one sexual difficulty in the previous year, with premature ejaculation being most common in this sample. In a study of 1516 heterosexual men in Hong Kong, Lau, Kim, and Tsui (2005) reported that 51% of men had experienced at least one sexual difficulty in the past year. Sexual functioning was measured with the same items as Laumann et al. (1999) but the time frame assessed was experiencing symptoms for three consecutive months in the last year.

Rates of sexual difficulties appear to be even higher among gay men. Mao et al. (2009) recruited 542 self-identified gay men from six high HIV-caseload general practices in Australia. Men were invited to complete a questionnaire while waiting for their clinical appointment. Sexual functioning was measured using the same

items as Laumann et al. (1999); however, the time frame differed (i.e., symptoms had to be experienced for at least one month in the past year). Approximately 74% of participants reported symptoms of sexual difficulty. Lau, Kim and Tsui (2008) assessed sexual functioning in men who have sex with men (MSM) in China. The term MSM was defined as men who had sex with men in the last 12 months and attended gay venues such as saunas, bars, and particular beaches. Participants were recruited at these venues and online via gay websites. Face-to-face venue-based interviews were conducted ( $n = 324$ ), plus an Internet-based questionnaire ( $n = 87$ ). Both methods used the same structured survey and the same sexual functioning items reported previously (Laumann et al., 1999). The time frame employed in this study was experiencing symptoms for three consecutive months in the past year; 42.5% reported at least one symptom of sexual difficulties. Hirshfield et al. (2010) conducted an online survey with 7001 American MSM recruited from gay-oriented websites. In this study, MSM referred to men who reported lifetime male sex partners, and oral or anal sex with a male partner in their most recent encounter within the last year. Those who were currently sexually active with females were removed. The same seven items as those employed by Laumann and colleagues (1999) were used to assess sexual functioning. The time frame was any experience of a symptom for “a period of time” in the last 12 months; 79% reported one or more sexual difficulty symptoms in the past year.

Caution is necessary when interpreting these and other prevalence rates. It is difficult to determine why substantial discrepancies are evident; however, possible explanations include: differences in methodology and measurement; cultural factors; and the characteristics of the sample such as age, health status, and – of particular importance to the current discussion – sexual orientation. As the focus of this thesis is on sexual functioning in gay men, greater attention will be paid to the role of sexual orientation and sexual difficulties.

### **1.3 Sexual Difficulties and Sexual Orientation**

The current diagnostic classification system of sexual dysfunctions (DSM-5; APA, 2013) is anchored in Masters and Johnson’s (1966) human sexual response model, which was derived from the study of heterosexual men and women. Although this model has been further modified (Kaplan, 1974; Masters & Johnson, 1979), a heterosexist perspective is still maintained with most research focusing on sexual difficulties experienced by heterosexual men incapable of engaging in vaginal

penetration. It is inappropriate to study gay men's sexual difficulties from a heterosexual vantage for a number of reasons. First, the context in which gay and heterosexual men define their sexuality differs (Campbell & Whiteley, 2006). Heterosexual men are taught from childhood to operate in accordance with a heterosexual script which teaches men how to act, feel, and behave in sexual encounters (Sandfort & de Keizer, 2001). Gay men, in contrast, define their sexuality through the coming out process, which consists of rejecting the heterosexual script (Campbell & Whiteley, 2006). Second, sex roles and positions have power-related symbolic meanings (Philaretou & Allen, 2001; Underwood, 2003). The sexual acts performed between two men or between a man and a woman are similar but the power dynamics may differ. Heterosexual men are expected to be the domineering, active partner whereas heterosexual women are expected to be the submissive, receptive partner (Sandfort & de Keizer, 2001). In sexual relations between two men, power dynamics are less straightforward (Kippax & Smith, 2001). Further, while sexual practices can be guided by normative understandings of masculinity and femininity, adoption of certain "roles" (i.e., "top" or "bottom") may stem from the physical pleasure one receives from a particular position (Johns, Pingel, Eisenberg, Santana, & Bauermeister, 2012; Moskowitz & Hart, 2011). Third, non-coital sexuality, such as oral sex, is more common in same-sex interactions and, in contrast to heterosexual relationships, there is generally no a priori assumption that penetration will occur (e.g., Blumstein & Schwartz, 1983; Laumann, Gagnon, Michael, & Michaels, 1994; Weatherburn, Hunt, Hickson, & Davies, 1992 as cited in Cove & Boyle, 2002). Fourth, and finally, it may be easier for a gay man to hide certain sexual difficulties. For example, a gay man may conceal erectile difficulties by assuming the receptive role in penetrative sex or giving rather than receiving oral sex (McCarthy, 1992).

#### **1.4 Previous Research on Sexual Difficulties and Gay Men**

Sandfort and de Keizer (2001) conducted a review of all studies (19 in total) examining sexual difficulties (or problems) in gay men. These studies differed greatly in terms of how sexual difficulties were conceptualised, the populations studied (e.g., HIV-positive gay men, straight and gay samples), and the methodologies used. In none of these studies were DSM-IV (APA, 1994) classifications applied, and few reliability and validity statistics were provided. Not surprisingly, there was little agreement among the studies and, thus, findings are

difficult to integrate. For example, prevalence rates of delayed orgasm ranged from 5% to 48% (McWhirter & Mattison, 1978; Reece, 1982). In twelve studies (Catalan, 1993; Catalan & Meadows, 2000; Everaerd et al., 1982; Garippa & Sanders, 1997; Masters & Johnson, 1979; McWhirter & Mattison, 1978; Paff, 1985; Quadland, 1985; Reece, 1982; Shaw, 1990; Shires & Miller, 1998; Wilensky & Myers, 1987), men had sought help for sexual difficulties; indeed, eleven of these studies were based on the treatment of sexual difficulties. In two of these studies (Everaerd et al., 1982; Shaw, 1990), gay men were included in a mixed sample (heterosexual and gay men); thus, conclusions about the gay participants cannot be made. The remaining seven studies (Bell & Weinberg, 1978; Dupras & Morisset, 1993; Gellman, 1986 [as cited in Sandfort & de Keizer, 2001]; Jones, Klimes, & Catalan, 1994; Rosser, Metz, Bockting, & Buroker, 1997; Rosser, Short, Thurmes, & Coleman, 1998; Tindall, Forde, Goldstein, Ross, & Cooper, 1994) involved men who were not seeking help for a sexual difficulty. As the researchers decided a priori what issues were to be considered, the participants could not provide their own interpretation of what constitutes a sexual difficulty.

In the only published study examining “self-defined sexual problems” in gay men, Cove and Boyle (2002) analysed data obtained from a survey of *Gay Times* readers in the United Kingdom ( $N = 300$ ). The reported sexual difficulties were divided into DSM-IV-TR dysfunctions and those that were incompatible with this system. Non-DSM-IV-TR difficulties, such as occupying a negative psychological state during/after a sexual encounter and discrepancies in the kind of relationship desired were more prevalent (84% versus 16%). The authors suggest the DSM-IV-TR does not cover the range of sexual dysfunctions gay men can encounter. However, this study has several limitations that warrant mention. First, no information is given about how the researchers classified respondents’ written statements into sexual difficulties that are compatible or incompatible with existing DSM-IV-TR definitions. Second, little detail is provided about the exact nature of the sexual difficulties falling outside of the DSM-IV-TR. Third, the use of questionnaires may have restricted participants’ answers to short descriptions in response to the researchers’ pre-defined hypotheses (Smith & Osborn, 2004).

Few researchers have looked at the different sexual experiences of gay and heterosexual men. However, Bancroft, Carnes, Janssen, Goodrich, and Long (2005b) identified some dissimilarities in the experience of sexual difficulties between

heterosexual ( $n = 1558$ ) and gay ( $n = 1378$ ) men in the United States. Participants were recruited from other studies by the same authors (Bancroft et al., 2003; Bancroft et al., 2004) and from online websites (67.2% of participants were recruited through the Internet). Erectile difficulties were measured using two items which assessed lifetime occurrences of sexual difficulties and current erectile difficulties (occurring within the previous three months). Rapid ejaculation was measured using one item: “In your sexual activities with a sexual partner, have you ever had a problem in ejaculating (i.e., coming) too quickly?” Responses were coded on a four-point Likert scale (1 = never; 4 = most of the time). Performance anxiety was measured using a single item (“If I feel I’m expected to respond sexually, I have difficulties getting aroused”). Erectile difficulties were reported more frequently for gay men compared to heterosexual men (for both life time occurrences and occurrences during the previous three months) whereas rapid ejaculation was reported more frequently for heterosexual men. Performance anxiety and age were strong predictors of erectile difficulties in both gay and heterosexual men. However, gay men reported higher performance anxiety compared to heterosexual men, irrespective of reporting erectile difficulties. Age was positively associated with reports of rapid ejaculation for gay participants only. In contrast, anxiety levels and relationship status were significantly associated with rapid ejaculation for heterosexual participants (i.e., those who scored higher on a measure of anxiety, and those in an exclusive relationship, reported greater rapid ejaculation).

### **1.5 Pain during Receptive Anal Sex**

Other notable differences between gay and heterosexual men are found in studies examining pain during intercourse. Pain during sex is the least often cited sexual difficulty in men but reports range from a lifetime prevalence of 0.2% in a random population sample (Lindal & Stefansson, 1993) to a lifetime prevalence of 8% in a combined community and clinical sample (Metz & Seifert, 1990). Pain during sex, particularly during anal sex, has been more frequently reported in gay men. Rosser et al. (1997) recruited 197 men at a free psycho-educational health seminar in the United States. Participants were informed about the seminar through referrals from therapists, medical practitioners, HIV clinics, a sexuality clinic, and service agencies that aided persons at risk for HIV (21% of participants). Advertisements also were placed in local gay and community magazines, and pamphlets and posters were distributed at gay political and social events, churches

and other public sites (79% of participants). The researchers used a 12-item Sexual Problems Checklist (SPC; Metz & Seifert, 1990) for males, which measures sexual problems and difficulties using a dichotomous (yes/no) response format. Alterations were made to the SPC to examine experiences of pain; dyspareunia items were replaced with two items measuring pain during receptive and insertive anal sex. Sixteen percent of participants described painful receptive anal intercourse as a current problem and 61% had experienced this pain at least once in their life.

Rosser et al. (1998) proposed the term “anodyspareunia<sup>2</sup>” to indicate recurrent or persistent pain experienced by the receptive partner during anal intercourse. Participants ( $N = 277$ ) were American men, recruited through a sexual health seminar, who had ever engaged in or attempted to engage in anal intercourse. Pain during anal sex was measured using seven-point Likert scales (1 = never experienced/no pain; 7 = always experienced/severe pain, too painful to continue). Twenty-five percent of participants reported “no-to-extremely-mild” pain, indicating that anal sex does not necessarily involve pain. Sixty-three percent reported “occasional to fairly frequent” pain of “mild to moderate severity.” The remaining 12% described “recurrent or persistent pain too painful to continue.” This latter group were arbitrarily defined as having “anodyspareunia.”

Damon and Rosser (2005) investigated the prevalence, predictors, diagnosis and consequences of pain during anal sex in greater detail and piloted clinical diagnostic criteria for “anodyspareunia.” Participants were 404 MSM in the United States who had engaged in, or attempted to engage in, receptive anal intercourse. A questionnaire format, with seven-point Likert scales, was used similar to those employed by other researchers in this area (1 = never experienced/no pain; 7 = always experienced/severe pain, too painful to continue). Measures included the frequency of pain (one item), severity of pain (one item), the emotional consequences of experiencing pain (in terms of “distress” and “interpersonal difficulty”), and factors believed to cause pain (e.g., lack of lubrication).

Two sets of criteria were employed to examine pain attributable to receptive anal intercourse; namely, behavioral criteria and clinical criteria. Behavioral criteria were based on the frequency and severity of pain only; those whose mean score for these two items was six or higher were classified as having behavioral anodyspareunia. The clinical criteria, which were similar to DSM-IV-TR (APA, 2000) criteria for female dyspareunia, included an assessment of the degree of

distress associated with receptive anal pain, as well as the potential source of the pain. Participants were considered to have clinical “anodyspareunia” if they reported: 1) having pain during receptive anal intercourse more often than not (i.e., a score of 5 to 7 for pain frequency); 2) experiencing either significant distress or interpersonal difficulty as a result of the pain (i.e., scores of 5 to 7 on the distress and/or interpersonal difficulty items); and 3) believing that their pain was not due to lack of lubrication, involuntary tensing of the anus, substance or medication use, or a general medical condition (e.g., haemorrhoids).

Ten percent of participants were classified as having “anodyspareunia” according to clinical criteria; 14% of participants were classified as having “anodyspareunia” according to behavioral criteria. Participants who met the behavioral criteria for anodyspareunia reported having avoided anal sex for periods of time (82%) and some restricted their behavior to insertive anal sex (49%). About one-third (31%) felt that this condition had disrupted a sexual relationship, while 15% reported that it had prevented them from finding new sexual relationships<sup>3</sup>. Those classified as having “anodyspareunia” (behavioral) were significantly less satisfied with their recent sexual relationships than were those without “anodyspareunia.” Clearly more work is needed in this area, but the research thus far suggests gay men may experience sexual difficulties that are not as germane to heterosexual men.

### **1.6 Male Sexual Difficulties: Summary**

This chapter introduced the topic of male sexual difficulties and dysfunction and their classification. Further, this chapter highlighted the limitation of our current classification system of sexual difficulties, particularly in terms of its use for non-heterosexual men. In addition, previous research into gay men’s sexual functioning was reviewed, which adds weight to the argument that the current model of sexual difficulties may not address the needs and experiences of this group.

Sexual function and symptoms, as well as the prevalence and correlates of sexual difficulties, are primarily assessed through the use of self-administered questionnaires. The next chapter, therefore, provides a detailed psychometric critique of current self-report measures of sexual difficulties focusing on their appropriateness for use with gay samples<sup>4</sup>.



## 2. Chapter Two

### Study 1: Sexual Difficulties Measurement

The measurement of subjective components of sexual functioning is of increasing importance in clinical research and practice. Self-administered questionnaires are the primary format of evaluation for sexual function and symptoms and serve as the chief means of data collection for determining the prevalence of sexual difficulties and their correlates. According to O’Leary et al. (1995), due to its sensitive nature, sexual function is best measured by patient self-report. For example, erectile difficulties can be measured physiologically; however, in real-life situations only the individual (or his/her partner) is privy to information about sexual function.

Self-report measures of sexual difficulties *should* provide a valid means of assessment in community samples; however, this may not always be the case. Considering the differences in prevalence rates (Hirshfield et al., 2010; Lau et al., 2005; Lau et al., 2008; Laumann et al., 1999; Mao et al., 2009), and experiences of sexual difficulties between heterosexual and gay men (Bancroft et al., 2005b; Cove & Boyle, 2002; Damon & Rosser, 2005; Rosser et al., 1997; Rosser et al., 1998), it may be possible that current measures of sexual difficulties do not adequately address the sexual problems of gay men.

#### 2.1 Purpose of Study 1

The objective of this study was to review current self-report measures of sexual difficulties with a particular focus on their psychometric properties and their suitability for use with gay men.

#### 2.2 Method

##### 2.2.1 Identification of Instruments

A number of electronic databases (e.g., EBSCOhost, Google Scholar, PsycINFO) were searched for journal articles, published between 1980 and 2013, containing the title, abstract or keyword terms “sexual function,” “sexual dysfunction,” or “sexual difficulties.” These papers were searched for “self-report,” “psychometric,” “instrument,” “questionnaire,” “scale,” “reliable,” “reliability,” “valid,” and “validity.”

The latest edition of *The Handbook of Sexuality-Related Measures* (Fisher, Davis, Yarber, & Davis, 2010) also was reviewed for additional instruments not

identified in the electronic database search. The reference lists of papers obtained through all searches were inspected to identify other measures of possible relevance.

### **2.2.2 Exclusion Criteria**

Instruments were excluded from consideration if: 1) they had not been published in peer-reviewed outlets; 2) insufficient details were available about their psychometric properties; 3) they focused on sexual attitudes, sexual knowledge, identity, and/or quality of life in patients with sexual difficulties (diary measures, administered interviews, and third-party report forms also were excluded); 4) they had been published prior to 1980, which coincided with the publication of the DSM-III<sup>5</sup>; and 5) they had been reviewed by Conte (1983). Eight instruments also were excluded as they did not meet the minimum published standards for reliability and validity identified by Daker-White (2002)<sup>6</sup>.

## **2.3 Results**

Seven measures were identified as being suitable for review (see Table 2.2). Table 2.3 summarises the key psychometric properties of these instruments. Each instrument, presented in alphabetical order, is reviewed below; where possible, details about item development, dimensionality, reliability and validity are provided.

### **2.3.1 The Arizona Sexual Experience Scale**

The Arizona Sexual Experience Scale (ASEX; McGahuey et al., 2000) is a five-item measure which was developed to detect and follow up sexual difficulties in men and women with depression (sample item: “Can you easily get and keep an erection?”). Five major domains of sexual difficulties are assessed with one item for each: sex desire, arousal, erection, ability to reach orgasm, and satisfaction from orgasm. Responses are coded on a six-point Likert scale with varying responses (e.g., 1 = extremely easily; 6 = never). Higher scores reflect poorer sexual functioning (possible range is 5 to 30). A total ASEX score greater than 19, any one item with a score greater than 5, or any three items with a score greater than 4 are the criteria used to determine whether an individual has a sexual dysfunction. The ASEX may be self-or clinician-administered; completed by heterosexual and non-heterosexual individuals; and is suitable for use with persons who do not have a sexual partner. Items were generated through a literature review of sexual dysfunction theory; no other information was provided about the item generation process.

The psychometric properties of the ASEX were examined in two studies. McGahuey et al. (2000) employed a sample of 38 control subjects ( $n = 16$  male;  $n = 22$  female) and 58 psychiatric patients ( $n = 23$  male;  $n = 35$  female), who were participating in other research by the authors. Control participants (response rate = 35.50%) were hospital employees, staff, residents, and faculty of the University of Arizona. Soykan (2004) used a sample of 43 Turkish outpatients ( $n = 25$  male;  $n = 18$  female) with end-stage renal disease who were undergoing haemodialysis (age range = 22-62 years,  $M$  age = 41.90 years).

**Dimensionality.** No details were provided about the factor structure of the ASEX.

**Reliability.** The ASEX demonstrated good scale score reliability ( $\alpha = .91$ ) and strong test-retest reliability after a one-to-two week time interval:  $r = .80$  ( $p < .01$ ) for patients;  $r = .89$  ( $p < .01$ ) for controls.

**Validity.** As a test of known-groups validity, the patient sample evidenced significantly higher scores than did controls (McGahuey et al., 2000). The concurrent validity of the ASEX was demonstrated through correlations between items on the ASEX and items and domains of a revised version of the Brief Sexual Functioning Questionnaire (BSFQ; Reynolds et al., 1988). Variable results were obtained: For example, the correlation between the BSFQ domain “satisfaction from sex life” and the satisfaction item on the ASEX was not statistically significant:  $r = -.44$  ( $p > .05$ ) for patients;  $r = -.24$  ( $p > .05$ ) for controls. Also, the BSFQ and ASEX items on the ability to maintain an erection did not correlate:  $r = .12$  ( $p > .05$ ) for patients;  $r = .26$  ( $p > .05$ ) for controls. However, a statistically significant – though moderate – correlation was found between scores on the ASEX and a psychiatrist’s assessment for the presence of sexual dysfunction ( $r = .53$ ,  $p < .001$ ; Soykan, 2004). Finally, discriminant validity was demonstrated through the absence of statistically significant correlations between ASEX scores and measures of depression (McGahuey et al., 2000). Given the established association between sexual functioning and well-being (e.g., Laumann et al., 1999), however, it is unclear why the authors expected there to be no association between sexual dysfunction and depression.

The ASEX may be a useful tool within certain areas of psychiatry where sexual difficulties are not the primary focus of the clinical investigation (Giraldi et al., 2011). For example, it has been administered to patients undergoing

haemodialysis for end-stage renal disease (Soykan, 2004) as well as patients with schizophrenia (Byerly, Nakonezny, Fisher, Magouirk, & Rush, 2006). However, in terms of its utility with members of the general population, several caveats must be considered. First, to date, no factor analysis has been conducted; thus, the dimensionality of the ASEX is unclear. Second, the test of known-groups validity was compromised by the age difference between the patient and control groups (50 years versus 38 years, respectively). If age had been treated as a covariate, it is unclear whether expected differences on the ASEX would have emerged. Third, some of the items appear to be double-barrelled or ambiguous. For example, the question, “How easily can you reach an orgasm?” does not allow the respondent to differentiate between premature and delayed ejaculation. Similarly, the erectile function item does not discriminate between the ability to achieve versus maintain an erection. Fourth, pain associated with intercourse is not assessed. Fifth, the time period assessed by the ASEX is the preceding week which does not map onto DSM diagnostic criteria. Given these limitations and the modest evidence available in support of the measure’s validity, the ASEX is not recommended for use among gay men.

### **2.3.2 The Brief Male Sexual Function Inventory**

The Brief Male Sexual Function Inventory (BSFI; O’Leary et al., 1995) consists of 11 items designed to measure current sexual functioning (sample item: “How much difficulty did you have getting an erection during the past 30 days?”). It covers three functional domains: sexual drive (two items), erectile function (three items), and ejaculatory function (two items), in addition to a problem assessment of these domains (three items), and overall satisfaction (one item). The BSFI uses a five-point response format (e.g., 0 = no function, big problem; 4 = good function, no problem). A total score is computed for each domain as well as an overall total (i.e., sum of the three domain scores). The question assessing overall satisfaction is scored separately (0 = very dissatisfied to 4 = very satisfied). Item generation was based on previous measures, expert and patient reviews, and pilot testing.

The psychometric properties of the BSFI were assessed in 74 American patients who experienced sexual dysfunction (median age = 55 years) and a control sample of 60 general medicine patients (median age = 45 years). No description of the clinical evaluation or diagnosis is provided for patients in the sexual dysfunction

sample. The control sample did not report any experience of sexual dysfunction or any health conditions which were likely to affect their sexual functioning.

**Dimensionality.** The BSFI was designed to be a multidimensional measure but a factor analysis was not performed in the original study (O’Leary et al., 1995). Mykletun, Dahl, O’Leary, and Fossa (2006) investigated the dimensionality of the BSFI in a community sample of 1185 Norwegian men (age range = 20-79 years). Through the use of public address lists, questionnaire packs were mailed to potential respondents (return rate = 34%). A Principal Component Analysis (PCA) with orthogonal rotation was conducted. The exact method of orthogonal rotation was not specified. A one-component solution was identified, using the eigenvalue greater than one “rule” (eigenvalue = 6.54, accounting for 66% of the variance).

**Reliability.** The BSFI subscales demonstrated variable scale score reliability ( $\alpha = .62-.95$ ; O’Leary et al., 1995); however, Cronbach’s alpha for the overall scale was high ( $\alpha = .94$ ; Mykletun et al., 2006). Acceptable test-retest reliability also was demonstrated over a period of one week (intra-class correlation coefficients ranged from .79 to .90 for the domains; O’Leary et al., 1995).

**Validity.** To date, there is insufficient evidence attesting to the construct validity of this measure. The only form of validation available is known-groups validity in which sexual dysfunction and control participants were compared. O’Leary et al. (1995) identified statistically significant differences for scores in the domains of erectile function, problem assessment, and satisfaction. However, scores in the domains of drive (libido) and ejaculation did not differ significantly.

In addition to the absence of evidence supporting the measure’s validity, other limitations warrant mention. First, PCA is not an optimal technique to examine dimensionality (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Additionally, the use of orthogonal rotation is problematic as it does not allow components to correlate. Second, the scale provides restricted evaluation of erectile and orgasmic functions. Third, premature (early) ejaculation is not measured. (Such an omission is surprising, as this sexual difficulty is relatively common.) Fourth, the wording of certain items may be viewed as phallogentric and/or heterosexist. For example, the question “Over the past 30 days, when you had erections, how often were they firm enough to have sexual intercourse?” suggests that most men engage in penetrative sex and ignores the finding that other forms of sexual activity are more common in

same-sex relationships (McCarthy, 1992). Based on these considerations, the BSFI is not recommended for use with gay men.

### 2.3.3 The Brief Sexual Function Questionnaire for Men

The Brief Sexual Function Questionnaire for Men (BSFQ; Reynolds et al., 1988) is a 21-item scale which assesses sexual functioning during the preceding month (sample item: “During the past month, if you lose your erection during any type of sexual activity (including masturbation), are you able to regain it?”). It provides information on five domains: sexual interest (two items), sexual activity/performance (ten items), sexual satisfaction (three items), physiological function (three items) as well as sexual preference (two items; i.e., heterosexual vs. gay). The BSFQ does not assume the respondent has a sex partner. Responses are coded on Likert scales with varying end-points (e.g., 0 = I have no sexual activity resulting in erection; 6 = never able to regain an erection). Information on how to score the items is not outlined clearly in the original paper, and appears to be quite complicated. In the activity domain, for example, the subscale score is the sum of eight items (3, 5, 6, 9, 10, 12, 15, and 16) minus the sum of two items (13 and 14). No details are given about the process used to generate scale items.

The psychometric properties of the BSFQ were examined in a small sample of men seeking treatment for major depressive disorder ( $n = 42$ , age range = 21-58 years), healthy control men ( $n = 37$ , age range = 21-59 years) and a clinic sample of men experiencing erectile dysfunction ( $n = 13$ , age range = 22-65 years). Control participants were recruited through a mass mailing to university staff and alumni. Controls showed no evidence of present or past psychiatric disorder. Participants in the erectile dysfunction group were referred from primary care physicians and urologists to the authors’ Sleep Evaluation Centre. None of these patients met criteria for a diagnosis of major or minor affective disorder (or other psychiatric diagnoses) at the time of examination (Reynolds et al., 1988).

**Dimensionality.** A PCA with varimax rotation was conducted on all items (except for the two items assessing sexual preferences) and a four-component solution was confirmed (accounting for 72% of the variance). Component retention was based on the eigenvalue greater than one “rule,” as well as the proportion of total variance explained by each component. However, inspection of the component output suggests that cross-loadings may be of concern (i.e., Item 11 [“indicate how often you have ejaculated in the past month”] loaded on both activity/performance

and physiological function at .53 and .50, respectively.) Based on the wording, one would expect item 10 to relate to the sexual satisfaction domain (i.e., “During the past month, have you felt pleasure from any forms of sexual experience?”). However, the PCA showed this item to load on both the sexual activity/performance domain and interest domain (.61 and .41, respectively). It is also problematic that one item (item 4) failed to load on any components and, yet, was retained.

**Reliability.** Scale score reliability coefficients were not computed, as the authors felt that the number of items in each domain was too small. No statistical citation was provided in support of this decision. Acceptable test-retest reliability of the scale items and domains (after one month) was reported by Howell et al. (1987) ( $r_s \geq .70, p \leq .01$ ; the specific  $r$  values for each domain and scale items were not reported). Participants consisted of a control sample of university staff and students ( $n = 20$ ) and men seeking help for depression ( $n = 26$ ); both samples were matched for age. Reynolds et al. (1988) further examined test-retest reliability over a period of 20 days ( $r = .95$ ). However, when examined on its own, the erectile dysfunction group evidenced significantly lower test-retest reliability ( $r = .57$ ), especially in the activity/performance domain ( $r = .45$ ). The latter finding suggests that the BSFQ is least reliable in the measurement of physiological function and erectile difficulties (Daker-White, 2002).

**Validity.** There is insufficient evidence attesting to the construct validity of the BSFQ. Reynolds et al. (1988) found the known-groups validity differed according to the samples being compared. The controls and depressed groups evidenced statistically significant differences. However, the erectile dysfunction group did not differ from the controls on three domains. Concurrent validity was tested by correlating scores on the BSFQ with scores on the Derogatis Sexual Function Inventory (DSFI; Derogatis, 1998; Derogatis & Melisaratos, 1979) and a sexual function log (Howell et al., 1987). The latter was a 14 day record of sexual interest and activity, which was completed by participants each night. Sexual interest was assessed on a visual analogue scale ranging from “none” to “most sexual thoughts you have ever had.” Sexual activity was measured by asking the subject to indicate how many times he had experienced an orgasm that day. Scores on the BSFQ sexual interest domain correlated significantly with the sexual interest component of the log ( $r = .67, p < .001$ ), but the correlation was much weaker for the sexual activity domain ( $r = .28, p < .02$ ). The BSFQ responses in sexual

activity/performance and satisfaction correlated with the sexual drive and satisfaction subscales of the DSFI ( $r_s = .56$  and  $.54$ ,  $p < .001$ , respectively).

However, when considering that these measures are intended to assess the *same* construct, one would expect the correlations to be much stronger.

Although the BSFQ includes items about one's sexual preference, a bias still exists towards heterosexual activities. For example, participants are asked how frequently they have ejaculated before they would like to whilst "attempting to insert [their] penis" and "thrusting after insertion." Another sample question is "During the past month, how long has intercourse itself usually lasted between insertion of [the] penis and ejaculation during sexual intercourse?" Again, an overreliance on items assessing penetrative sex may provide insufficient coverage of the diversity of sexual practices that constitute same-sex sexual interactions. Given this limitation, in conjunction with the scant evidence of reliability and validity, the BSFQ is not recommended for use with gay men.

### **2.3.4 The Derogatis Interview for Sexual Functioning-Self Report**

The Derogatis Interview for Sexual Functioning-Self Report (DISF-SR; Derogatis, 1997) is a 25-item<sup>7</sup> self-report scale which assesses sexual function in men and women. (It also is available in the form of a semi-structured interview: the Derogatis Interview for Sexual Functioning [DISF]). It assesses five domains of sexual functioning: sexual cognition/fantasy (five items), sexual arousal (five items), sexual behavior/experience (five items), orgasm (six items) and sexual drive/relationship (four items). Responses are made on nine-point frequency scales for the first three domains (0 = not at all; 8 = four or more times per day); five-point satisfaction scales for the fourth domain (0 = not at all; 4 = extremely); and a combination of nine-point and five-point scales for the fifth domain. Content for the DISF-SR was taken from the original 254-item Derogatis Sexual Functioning Inventory (DSFI; Derogatis, 1998). However, no rationale is provided for selection of the items constituting the DISF-SR.

**Dimensionality.** A PCA was conducted with responses from 252 American men diagnosed as having erectile dysfunction according to the criteria of the DSM-IV (APA, 1994) and taking part in a multi-centre drug trial. Using equimax rotation and the eigenvalue greater than one "rule," a six-component solution emerged as being most suitable, accounting for 71% of the variance. The six components were orgasm, sexual cognition and fantasy, sexual behavior and experience, autoeroticism,

sexual arousal, sexual drive and relationship. Unfortunately, the component solution is not as “clean” as one might anticipate. For example, loading on the first component was one item from the sexual drive/relationship domain and six items from the orgasm domain. The item from the sexual drive/relationship domain also double-loaded on components one (.41) and six (.43). Two items from the sexual behavior/experience domain and one item from the sexual arousal domain loaded on the fourth component<sup>8</sup> entitled autoeroticism (loadings of .62, .87 and .84, respectively).

**Reliability.** In a community sample of men and women, scale score reliability coefficients were good ( $\alpha$ s ranged from .74 to .80;  $N = 168$ ), and, over a one-week period, test-retest reliability ranged from .81 to .90 ( $n = 122$ ).

**Validity.** There is limited evidence to support the validity of the DISF-SR, as most published research has used the interview format (i.e., the DISF: Zinreich et al., 1990). In terms of known-groups, the only available evidence appears in a study of 168 volunteers ( $n = 82$  men,  $n = 86$  women,  $M$  age = 33.90 years). Participants were administered the DISF-SR and a measure of well-being in group settings (Derogatis, 1997). On the basis of DISF-SR scores, participants were grouped as being either “less than sexually adequate” ( $n = 45$ ) or “sexually adequate” ( $n = 123$ ). A series of  $t$ -tests were conducted to compare the well-being scores of the two subgroups. Statistically significant differences were noted between the groups (i.e., “sexually adequate” participants evidenced greater well-being).

The absence of psychometric evidence supporting the DISF-SR’s scale score validity is complemented by concerns about heterosexist bias. For example, an item such as “During the past 30 days, or since the last time you filled out this inventory, how often have you had thoughts, dreams, or fantasies about erotic parts of a woman’s body” possesses little relevance to gay men and their sexual functioning. Given these limitations, the DISF-SR is not recommended for use with gay men.

### 2.3.5 The Florida Sexual History Questionnaire

The Florida Sexual History Questionnaire (FSHQ; Geisser et al., 1991) is a 20-item instrument designed to differentiate organic and psychogenic erectile dysfunction (sample item: “Difficulty in maintaining an erection for sexual intercourse prior to ejaculation occurs... always to never”). An additional question asks participants to list prior interventions for their sexual dysfunction. Responses are coded on six-point Likert scales with varying response options (e.g., 1 = always;

6 = never). The scoring of the FSHQ is not presented clearly in the original paper. As well, little information is provided about how items were generated (i.e., the authors report that some of the items were developed in response to previous literature on the impact of endocrine and vascular diseases on sexual functioning).

The validity and reliability of the FSHQ were examined in diabetic males with erectile dysfunction ( $n = 33$ ; age range = 24-73 years,  $M$  age = 50.50) and a healthy, age-matched control sample ( $n = 58$ ; age range = 31-83 years,  $M$  age = 47) in the United States. Erectile dysfunction (termed impotence in the original study) was defined as difficulty of six months or greater duration in obtaining or maintaining an erection suitable for vaginal penetration.

**Dimensionality.** The FSHQ assesses four domains of sexual functioning: interest and desire for sexual activity, sexual development, current sexual behaviors, and sexual satisfaction. However, a factor analysis was not performed to confirm whether these four domains exist.

**Reliability.** Cronbach's alpha was good ( $\alpha = .90$ ), as was the measure's split-half reliability (.86).

**Validity.** To date, there is insufficient evidence attesting to the validity of this scale. The FSHQ has only been validated through a comparison of men with diabetes (and erectile difficulties) to a healthy control sample (no diabetes or erectile difficulties). No comparison measures were used. The FSHQ discriminated between the two groups on 11 out of 20 items. Using Wilcoxon rank sum tests, responses on the FSHQ did not differentiate between men with organic ( $n = 21$ ) or psychogenic ( $n = 12$ ) erectile dysfunction, which is exactly what the scale was designed to measure.

Two additional limitations warrant mention. First, participants with limited reading comprehension needed clarification of the meaning of some items suggesting the measure's readability may be of concern. Second, numerous items demonstrate a heterosexist bias as they focus on "vaginal penetration." Taking these factors into account, the FSHQ cannot be recommended for use with gay men.

### 2.3.6 The International Index of Erectile Function

The International Index of Erectile Function (IIEF; Rosen et al., 1997) is a 15-item instrument which measures male sexual functioning (sample item: "When you had erections with sexual stimulation, how often were your erections hard enough for penetration?"). Five domains are assessed: erectile function (six items), orgasmic function (two items), sexual desire (two items), intercourse satisfaction

(three items), and overall satisfaction (two items). Responses are coded on five and six-point Likert scales (e.g., 1 = very low, 5 = very high; 0 = no sexual activity, 5 = almost always or always), with higher scores denoting better sexual functioning (possible range is from 5 to 75). Domain scores are calculated by summing the scores for individual items in each domain. The IIEF was designed for use in clinical trials of Sildenafil to detect treatment-related changes and is considered to be the gold standard measure for the assessment of erectile functioning (Daker-White, 2002). Item generation involved a literature review, interviews with male patients and their partners, an international panel of experts, and pilot testing.

The psychometric properties of the final 15-item questionnaire were examined in a large-scale clinical trial with three samples. Sample A was patients with a diagnosis of erectile dysfunction for a minimum duration of six months who were participating in a clinical trial ( $n = 111$ , age range = 29-89 years,  $M$  age = 56). The clinical evaluation and diagnostic criteria were not detailed, although the aetiology was mixed (40%), psychogenic (37%), and organic (21%). Sample B was a comparison control group of age-matched volunteers ( $n = 109$ , age range = 29-76 years,  $M$  age = 55) without any history of male erectile dysfunction. Sample C included both patients with erectile dysfunction ( $n = 37$ , age range = 29-71 years,  $M$  age = 53) and normal volunteers ( $n = 21$ , age range = 37-76 years,  $M$  age = 58).

**Dimensionality.** A PCA with varimax rotation identified five components with eigenvalues greater than one (erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction). Overlap among some of the domains was identified, particularly between erectile function and intercourse satisfaction. For example, item seven (“Over the last month, when you attempted sexual intercourse how often was it satisfactory for *you*?”) had a component loading of .61 on the erectile function domain, but was retained in the intercourse satisfaction domain (on which it had a component loading of .48).

**Reliability.** Strong scale score reliability was demonstrated for the five domains across the three samples ( $\alpha = .73-.99$ ) and were especially high for the total scale scores ( $\alpha = .91$  for sample A;  $\alpha = .96$  for sample B;  $\alpha = .91$  for sample C). Alpha coefficients for the erectile function and orgasmic function domains were extremely high, which implies item redundancy ( $\alpha_s = .92-.96$ ;  $\alpha_s = .92-.99$ , respectively). Cronbach’s alpha was lower for the other domains: sexual desire (sample A:  $\alpha = .77$ ; sample B:  $\alpha = .82$ ; sample C:  $\alpha = .91$ ); intercourse satisfaction

## Chapter 2: Sexual Difficulties Measurement

(sample A:  $\alpha = .73$ ; sample B:  $\alpha = .87$ ; sample C:  $\alpha = .88$ ); and overall satisfaction (sample A:  $\alpha = .74$ ; sample B:  $\alpha = .87$ ; sample C:  $\alpha = .86$ ). Cronbach's alpha also was used for the two-item subscales (orgasmic function, sexual desire, and overall satisfaction). However, in this context, it would be more appropriate to correlate scores between the items (i.e., Cronbach's alpha is the average of all possible split-half reliabilities of a scale [Streiner, 2003] and, thus, does not make conceptual sense unless three or more items are being assessed).

For the five domain scores, test-retest reliability correlation coefficients were acceptable ( $r = .64-.84$ ) and particularly good for the erectile function and sexual satisfaction domains ( $r = .84$  and  $.81$ , respectively).

**Validity.** Known-groups validity was assessed by comparing the erectile dysfunction and control groups' responses. Statistically significant differences were found across most domains, except for sexual desire. Significant correlations ( $r_s = .45-.75$ ) were found between the domain scores for Sample C and a blinded clinical interview, providing evidence of concurrent validity. Discriminant validity was indicated by the absence of statistically significant correlations between scores on the IIEF and indices of marital adjustment and social desirability (i.e., the authors predicted that marital adjustment, social desirability and scores on the IIEF would not correlate).

The IIEF appears to be a psychometrically sound measure of sexual functioning; however, some limitations should be noted. The main focus of the IIEF is on erectile functioning (assessed using six out of 15 items). Sexual desire and orgasmic function are assessed using only two items each. Furthermore, the orgasmic function items do not allow for differentiation between early (i.e., premature) and delayed ejaculation. The experience of pain during sex is overlooked by this measure. In addition, the wording of select items may suffer from heterosexist bias. For example, the question "Over the past 4 weeks, or since your last office visit, when you attempted sexual intercourse, how often were you able to penetrate (enter) your partner?" This item ignores gay men who assume the receptive role when engaging in anal intercourse. As well, it fails to recognise gay men who do not participate in penetrative sex.

Although the IIEF has been used in studies involving gay populations (e.g., Breyer et al., 2010; Reece et al., 2009), no reliability or validity statistics were reported. Coyne et al. (2010) recognised this shortcoming and examined a modified

version of the IIEF with 486 HIV-positive MSM. Participants were men attending for routine HIV care at seven European HIV treatment centres. No demographic information was provided about the sample. Questionnaires were completed at home and posted back to the investigators. The wording of some of the items was altered to be better suited for MSM. Sexual intercourse was changed to “active (insertive) anal intercourse” and “passive (receptive) anal intercourse” and was broadened to include oral sex, masturbation and morning erections. This resulted in the addition of seven items (22 items in total). A PCA with varimax rotation was performed and a four-component solution was identified (eigenvalues greater than 1.5). Contrary to studies using the original IIEF, intercourse satisfaction and overall satisfaction emerged as a single component. Good scale score reliability was observed for three domains: erectile function ( $\alpha = .82$ ), orgasmic function ( $\alpha = .83$ ), and sexual desire ( $\alpha = .89$ ). However, the reliability coefficients for the intercourse satisfaction and overall satisfaction domains were poor ( $\alpha = .55$  and  $\alpha = .42$ , respectively). No evidence for validity was provided. Despite representing a positive advance for the measurement of sexual difficulties in gay men, the modified version of the IIEF was still defined by a narrow focus (i.e., erectile functioning) and there was limited evidence attesting to its psychometric soundness. Thus, the author does not recommend this measure be used to assess sexual functioning among gay men.

### **2.3.7 The Male Sexual Health Questionnaire**

The Male Sexual Health Questionnaire (MSHQ; Rosen et al., 2004) contains 25 items and assesses sexual function and satisfaction (sample item: “Are you able to ejaculate when having sexual activity with your wife or main partner?”). It was developed to assess functioning in aging men with urogenital concerns associated with certain medical conditions (i.e., heart disease, prostate cancer, and benign prostatic hyperplasia/lower urinary tract symptoms). The MSHQ addresses three domains of sexual function: erection (three items), ejaculation (seven items), and sexual satisfaction (six items). Nine items assess sexual activity, time since last sexual encounter, level of and changes in sexual desire, and bother associated with the sexual dysfunction. Responses are coded on five and six-point Likert scales of varying responses (e.g., 0 = none of the time; 5 = all of the time) with higher scores indicating better sexual functioning. The time period assessed is the previous four weeks. In comparison to the IIEF, the MSHQ provided a more in-depth assessment of ejaculatory function and sexual satisfaction. The ejaculation domain of the MSHQ

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assesses delayed ejaculation, loss of ejaculation, the force of ejaculation, the amount of semen ejaculated, pleasure associated with ejaculation, pain/discomfort during ejaculation, and the bother associated with ejaculation. An initial pool of items (75 items) was selected from the results of a literature review, expert panel solicitation, and patient interviews.

The psychometric properties of the MSHQ were examined in two samples: Sample A and Sample B. Study one, which used the former group, involved administering the initial version of the MSHQ. Participants were men with urogenital symptoms ( $n = 153$ ), with moderate to severe lower urinary tract symptoms (LUTS) and self-reported difficulty with erection or ejaculation, and a comparison group of control men ( $n = 96$ ) who reported no sexual difficulties and mild or no LUTS. Participants were recruited through an independent survey research organisation and were not participating in clinical trials or other research studies. Subjects were required to have a stable partner relationship for at least the past 12 months and to be generally healthy. Study two was comprised of a subset of patients ( $n = 56$ ) and controls ( $n = 56$ ) from study one who were re-administered a second 25-item version of the questionnaire after a one week interval.

**Dimensionality.** A PCA was performed on the items in study one. Only items with loadings greater than .30 were retained, and items were then factor analysed using oblimin rotation. Two sexual function domains with eigenvalues greater than one were observed: erection and ejaculation. Three items showed high component loadings on the erection domain (loadings ranged from .84 to .92), and seven items had moderate to high loadings on the ejaculation domain (loadings ranged from .52 to .79). There was a moderate intercorrelation between the two domains ( $r = .56$ ), but none of the individual items had significant cross-loadings (i.e., greater than .20). A third component was identified in study two: satisfaction. Moderate inter-domain correlations were observed;  $r = .49$  for erection/ejaculation;  $r = .22$  for erection/satisfaction;  $r = .40$  for ejaculation/satisfaction ( $p$  values were not reported).

**Reliability.** Scale score reliability was good for the erection ( $\alpha = .90$ ) and ejaculation ( $\alpha = .81$ ) domains in study one and for all three domains in study two ( $\alpha = .84$ -.93). In both studies, test-retest reliability (Pearson's zero-order correlation) was also high, ranging from .85 to .94 for each of the domains.

**Validity.** The MSHQ evidenced good known-groups validity; in study one and two, the MSHQ significantly differentiated between men with LUTS and sexual dysfunction and healthy men.

Scores on the domains of the MSHQ were correlated with the domains of the IIEF as a test of concurrent validity. In study one, the correlations were not statistically significant. In study two, statistically significant correlations were obtained, but the correlations were weak considering these instruments are intended to measure the same constructs:  $r = .58$  ( $p < .005$ ) for erection domains;  $r = .48$  ( $p < .005$ ) for ejaculation and orgasm domains;  $r = .59$  ( $p < .005$ ) for satisfaction domains.

Domain scores were correlated with scores on a depression measure as support for convergent validity. Statistically significant correlations were only observed between the ejaculation domain in study one ( $r = -.23$ ,  $p < .005$ ) and the satisfaction domain in study two ( $r = .36$ ,  $p < .05$ ), which is unexpected considering the established association between sexual functioning and well-being (e.g., Laumann et al., 1999).

The MSHQ performed reasonably well on tests of discriminant validity (i.e., no significant correlations were noted between scores on the MSHQ and measures of social desirability and life satisfaction). It is unclear, however, why the authors expected there to be no association between overall life satisfaction and sexual dysfunction.

Although the MSHQ provides a more in-depth analysis of delayed ejaculation compared to the IIEF, it does not assess premature ejaculation or the experience of pain associated with sexual activity. Furthermore, some items of the MSHQ appear problematic in terms of their ability to differentiate between situational and generalised sexual dysfunctions. Consider, for example, the item: “In the past 4 weeks, when masturbating by yourself or having sexual activity with your wife or main partner, how often have you felt like you were ejaculating but no fluid came out?” If an individual has situational orgasmic difficulties (i.e., sexually functional when alone or masturbating, but experiences problems when he is with a partner), how is he supposed to answer this item?

In terms of suitability for use with gay men, the psychometric properties of the MSHQ have not been examined in this population. A short form of the MSHQ (the MSHQ-EjD Short Form; Rosen et al., 2007) was used with gay individuals but

is not reviewed here due to its sole focus on ejaculatory function. Although items in the MSHQ refer to a “wife,” the option of “primary partner” also is given, which is useful in avoiding heterosexist bias. On the other hand, the MSHQ may not be applicable for younger samples or men without a sexual partner. For example, the items: “Compared to FIVE years ago, would you say the physical pleasure you feel when you ejaculate has increased/decreased?” and “Are you able to ejaculate when having sexual activity with your wife or main partner?” Sexual difficulties are not restricted to older men and those without a partner also can be affected (e.g., Laumann et al., 1999). Consequently, the use of the MSHQ for gay men is not advised.

### **2.4 Discussion**

This chapter has reviewed seven measures of sexual function (i.e., ASEX, BSFI, BSFQ, DISF-SR, FSHQ, IIEF, MSHQ). None of the measures reviewed covered all the domains of men’s sexual functioning or dysfunction as currently defined by the DSM-5 (APA, 2013); pain during sex was overlooked by all of the measures reviewed. Several were developed for the assessment of sexual functioning in clinical populations (i.e., ASEX, FSHQ, IIEF, MSHQ) so their use in general population samples is questionable. None of the measures assessed pain during anal sex which is a sexual difficulty experienced by some gay men (e.g., Damon & Rosser, 2005; Hollows, 2007; Rosser et al., 1997; Rosser et al., 1998). None of the studies reported including gay participants in the item development phase, which may have contributed to the heterosexist wording evident throughout (i.e., BSFI, BSFQ, DISF-SR, FSHQ, IIEF). Only one of the measures has been used in its entirety with gay men, the IIEF, but reliability and validity statistics were not reported. One study (Coyne et al., 2010) did examine a modified version of the IIEF with MSM but the resulting scale was not psychometrically robust. Thus, no superior generic sexual function measure was identified for use with gay populations.

The absence of a measure suitable for gay men was not the only issue that emerged throughout the review. At first glance, some of the measures appeared to possess reasonable psychometric properties; however, upon closer inspection, several areas of concern emerged.

First, in two cases (i.e., ASEX, FSHQ), no factor analysis was performed which is an important step in scale development (Costello & Osborne, 2005).

Second, when the factor structure was examined (i.e., BSFI, BSFQ, DISF-SR, IIEF, MSHQ), there was an overreliance on PCA, the default option on SPSS. PCA is not a “true” method of factor analysis and is most suitable as an item reduction technique (Fabrigar et al., 1999). Yet, it was seldom used for this purpose (i.e., for the BSFI, BFSQ, DISF-SR, and IIEF, PCA was used to confirm pre-defined “factors”<sup>9</sup>). In some cases, the PCA results were completely ignored (i.e., BSFQ, DISF-SR, IIEF). It would have been more fitting to use an exploratory factor analysis (identification of factors) and a confirmatory factor analysis (confirmation of factors based on previous theory and research) for the development and refinement of these scales; yet, not one paper employed these methods.

Third, the techniques used within PCA were not optimal: Orthogonal rotation (e.g., varimax, equimax) was employed for scales where oblique rotation would have been preferable (i.e., BSFI, BSFQ, DISF-SR, IIEF). Orthogonal rotation does not allow variables to correlate whereas oblique rotation does (Costello & Osborne, 2005). It seems reasonable to assume that subscales focusing on male sexual difficulties would be, at least, modestly intercorrelated.

Fourth, in determining the number of items to retain, three papers relied solely on the eigenvalue greater than one “rule” (i.e., DISF-SR, IIEF, MSHQ). This technique is not based on mathematical decision-making, and is believed to be among the least accurate method of factor retention as it can lead to over-extraction (Costello & Osborne, 2005). In two cases, it was used with other criteria (i.e., BSFQ also examined the percentage of variance explained; MSHQ also examined component loadings). It would have been optimal to employ parallel analysis in conjunction with other techniques (i.e., variance explained criterion, screeplot). Parallel analysis is a preferred means of factor identification as it has been shown to be consistently accurate compared to other techniques (Zwick & Velicer, 1986).

Fifth, over half of the measures reviewed (i.e., BSFI, BSFQ, DSFI-SR, FSHQ) possess questionable validity. A related concern pertains to apparent confusion over the type of validity being assessed. For example, Rosen et al. (1997) reported concurrent validity as convergent validity (i.e., IIEF).

Sixth, and finally, although reliability assessments were adequate in most cases, insufficient time intervals were used to measure test-retest reliability (i.e., ASEX, BSFI, DSFI-SR, MSHQ). High Cronbach alpha coefficients also were reported in four of the six papers providing this statistic (i.e., ASEX, BSFI, IIEF,

MSHQ). According to Streiner (2003), acceptable alpha values should not exceed .90 as higher values suggest item redundancy.

### **2.5 Conclusion**

This chapter highlights the absence of a psychometrically sound measure of male sexual function that can be used with gay men. Additionally, attempts to adapt existing measures for use with gay populations (such as the IIEF; Coyne et al., 2010) were unsuccessful. Furthermore, no “gold standard” measure was identified for use with heterosexual men due to various psychometric deficiencies apparent with current scales. Many researchers have employed single-item indicants to assess sexual difficulties in gay and heterosexual men (e.g., Hirshfield et al., 2010). Perhaps this is a result of the absence of a superior measure, which underscores the need for a high quality scale. The lack of a “gold standard” not only has significant implications for social science research but for clinical practice where the development and refinement of effective treatment strategies for those affected by sexual dysfunctions is important. Chapter Three will begin to address this gap in the sexological field through a qualitative assessment of male sexual functioning.

### **3. Chapter Three**

#### **Study 2: Qualitative Exploration of Men's Sexual Difficulties**

It is apparent there is a gap in our knowledge base in relation to gay men's sexual functioning; what is known is based on a model using heterosexual men and women (Chapter One). This has a direct influence on what is considered to be a sexual dysfunction or difficulty (Cove & Boyle, 2002), which is problematic when assessing sexual functioning in non-heterosexuals. For example, some research has suggested that the experience of pain during receptive anal sex could be a dysfunction (or difficulty) specific to gay men (Damon & Rosser, 2005; Hollows, 2007; Rosser et al., 1997; Rosser et al., 1998).

#### **3.1 Limitations of Previous Research**

Previous research in the area of male sexual functioning has been conducted through quantitative methodologies; that is, the use of self-report questionnaires (e.g., Cove & Boyle, 2002; Hirshfield et al., 2010; Lau et al., 2008; Mao et al., 2009). Although quantitative methodologies are advantageous when examining a well-established topic, if researchers are uncertain of what precisely constitutes the focus of interest, the usefulness of quantitative methodologies can be limited. For instance, what exactly do gay men consider to be sexual difficulties? Due to a reliance on quantitative methodologies employed within a heterosexist framework, this key question has gone unanswered.

The need for a psychometrically sound instrument to assess gay men's sexual functioning has been documented (Study 1). Based on a review of key measures employed within the domain of sexual functioning, no psychometrically robust measure was identified for use with gay populations. Psychometric assessment plays a critical role in sexual dysfunction understanding and treatment. Before a measure to assess sexual functioning in gay men can be developed, a broad and concise understanding of gay men's sexual difficulties needs to be established. The best means to achieve such an understanding would be phenomenological (i.e., asking gay men to particularise what this concept means to them through the use of a qualitative methodology [e.g., Nassar-McMillan, Wyer, Oliver-Hoyo, & Ryder-Burge, 2010; Singh, 2008]).

#### **3.2 Qualitative Enquiry**

The use of qualitative methods could broaden understanding of gay men's sexual difficulties. Qualitative methods are particularly valuable in the early stage of

theory development, where a topic needs to be explored in great detail. Notably, qualitative methods allow one to go beyond the forced response formats of the questionnaire, and explore the context and social meaning of a phenomenon, and how it affects individuals (Rowan & Wulff, 2007). This type of inquiry is flexible allowing novel areas relevant to the research topic to arise which were not predicted by the researcher. These areas can be further probed, enhancing the overall purpose and outcomes of the research and allowing a more holistic view of the phenomenon under investigation to be achieved.

Qualitative methods also are useful for the development of measures to assess a topic of interest. The development of psychometrically sound measures is of vital importance because such instruments are relied on to assess subjects which cannot be directly observed. The validity of psychological concepts in quantitative research can be enhanced through being initially grounded in real life situations and observations through qualitative inquiries (Rowan & Wulff, 2007).

**3.2.1 Within-Method Triangulation.** Within qualitative methodology, the most common forms of data collection are individual interviews and focus groups. Both forms permit participants to give detailed accounts of their experience in their own words. Numerous authors have argued for the combined use of multiple qualitative methods (i.e., within-method triangulation) to enhance the analysis of a subject and expand its conceptualisation (e.g., Linhorst, 2002; Wadsworth, 2000). In particular, this multifaceted approach is beneficial in providing a range of general overviews (focus groups) as well as in-depth descriptions (individual interviews) of personal experiences. For example, Lambert and Loiselle (2008) compared the resultant data from interviews and focus groups as part of a study on patterns of cancer information-seeking behavior. In this study, the focus group data represented a general understanding of the area, whereas the interview data reflected how participants proceeded through a particular behavior. According to the authors, the data from the interviews and focus groups revealed overlapping yet complementary findings, which contributed to a more nuanced understanding of the topic. If applied to men's sexual functioning, the use of within-method triangulation may further enrich conceptualisations of this construct.

### **3.3 Purpose of Study 2**

Gaining understanding about the social, cultural, and physical aspects of sexual difficulties symptoms in gay men will help researchers and clinicians to more

accurately assess and refine sexual “dysfunction” criteria as it relates to this group. To date, no qualitative study of men’s conceptualisations of sexual difficulties has been conducted. The purpose of this study was, therefore, to qualitatively explore sexual difficulties in heterosexual<sup>10</sup>, gay and bisexual men; examine how these difficulties are conceptualised; and explore possible differences and similarities among the participants. Ultimately, the knowledge gained through this study will be used to develop a questionnaire to assess gay men’s sexual difficulties.

### **3.4 Method**

#### **3.4.1 Participants**

Fifty-two males between the ages of 18 and 66 years ( $M = 35.38$ ,  $SD = 12.62$ ) participated in 29 individual interviews and seven focus groups (consisting of one group of two discussants; three groups of three discussants; and three groups of four discussants). Focus groups were composed exclusively of heterosexual men, gay men, or bisexual men (i.e., participants segregated according to sexual orientation). The participants were recruited in Ireland and included men resident in all four provinces: Connaught (19 participants), Leinster (16 participants), Munster (13 participants), and Ulster (four participants). The demographic characteristics of the sample are presented in Table 3.1.

#### **3.4.2 Data Collection**

Participants were recruited through a variety of means. A national campaign was launched seeking participation from all men aged 18 years and over. Advertisements were placed in local and national newspapers ( $n = 8$ ) and on Irish websites ( $n = 2$ ). The research was discussed on the national television news ( $n = 2$ ) and on national and local radio stations ( $n = 11$ ). In addition, information on the study was distributed at LGBT Pride Events around the country ( $n = 6$ ). Irish LGBT organisations (e.g., GLEN, GiGSoc) were contacted and asked to distribute information about the study to members ( $n = 8$ ). Chain-referral sampling also was used whereby acquaintances of the author were asked to inform other men about the study ( $n = 15$ ).

#### **3.4.3 Procedure**

Interviews and focus groups were conducted either in person (17 interviews; two focus groups) or over the phone (12 interviews; five focus groups), and in a variety of settings (depending on the needs of the participant). Locations included on-campus laboratories situated at a university in Western Ireland, as well as

participants' homes. All contributors were given the option of participating over the phone or in person for two reasons: 1) due to the sensitive nature of the topic, some participants were more comfortable discussing the topic while remaining anonymous; and 2) it was important to enable men from a variety of geographical locations throughout Ireland to participate. Phone focus groups were facilitated by web conferencing technology (i.e., *Skype*).

A semi-structured interview schedule was developed and used to guide discussions. Participants were asked about sexual dysfunctions and sexual difficulties separately, using the same questions for each. The questions focused on: 1) the types of sexual difficulties and dysfunctions that could be experienced by men; 2) the effects of these difficulties and dysfunctions; and 3) coping strategies for sexual difficulties and dysfunctions. To promote participant comfort and disclosure, the interviewer began with general questions (e.g., "What are the sexual dysfunctions that men may experience?") before asking questions of a more personal nature (e.g., "Have you ever experienced a sexual difficulty?"). The interview schedule (i.e., the set of guiding questions and probes used to facilitate discussion of relevant topics) is provided in Appendix A.

Ethical approval was obtained from the Research Ethics Committee of the National University of Ireland, Galway. For in-person interviews and focus groups, participants were provided with an information sheet and consent form. Men participating via telephone were emailed a copy of the information sheet and consent form, details of which were reviewed with the interviewer. The interviewer verbally reiterated the information provided by participants was anonymous and confidential, and participants could refuse to answer any question or terminate the interview at any time without penalty or consequence. In addition, participants of the focus groups were asked to be respectful of others, and not to share information discussed within the group with other people. Finally, men were reminded that the conversation would be audio-recorded and asked if they consent to this taking place. All men gave their permission. To maintain confidentiality, all names provided in the quoted material are pseudonyms.

### **3.4.4 Data Analysis**

On average, the interviews lasted 57 minutes and the focus groups lasted 120 minutes. The interviews and focus groups were transcribed verbatim (i.e., paralinguistic cues such as "em" and "um" were included) which resulted in 730

single-spaced pages (431 for individual interviews [ $M = 15$ ]; 299 for focus groups [ $M = 42.75$ ]). Data were subject to thematic analysis employing Braun and Clarke's (2006) recommendations. The use of the statistical software package NVivo9 aided in managing the coding of the data set. Specifically, the following procedures were employed in interpreting the data. The first transcript was read several times. Notes were made in relation to significant and interesting comments made by the interviewee. Emerging themes were documented and coded using NVivo9. Subsequent transcripts were analysed using the same procedure. A list of provisional themes was constructed and connections between them were sought. When all transcripts were analysed, a final list of subordinate themes was created. Themes were selected based on their pervasiveness in the data, the richness of the passages emphasising the themes, and how the theme helped clarify other aspects of the account. A subsample of transcripts (ten in total) were reviewed and analysed (using the same procedure) by the author's supervisor. The resultant codes and themes were compared to those identified by the author. No significant differences in interpretation were found.

### 3.5 Results

Participants made a distinction between physical sexual difficulties (in terms of penis functioning and pain) and psychological/interpersonal difficulties. However, these were viewed as being intercorrelated (i.e., a psychological difficulty could influence physical functioning and vice versa). Each broad category of difficulties and the salient themes that emerged when participants discussed it are outlined below. An overview of themes and related subthemes are presented in Figure 3.1. (A list of key themes and respective illustrative quotations are given in Tables 3.2 through 3.4.)

#### 3.5.1 Physical Sexual Difficulties: Penis Functioning

To initiate conversations, participants were asked to discuss erectile difficulties and premature ejaculation; all participants classified these as physical sexual dysfunctions. When asked what other type of sexual difficulties men could experience, 16 interviewees and three focus groups suggested delayed ejaculation or no ejaculation. The majority of participants categorised delayed ejaculation as a physical sexual difficulty (one interviewee and five focus group participants believed it was not a dysfunction). Participants' responses were characterised by phallocentrism (i.e., the focus was on the physical functioning of the penis).

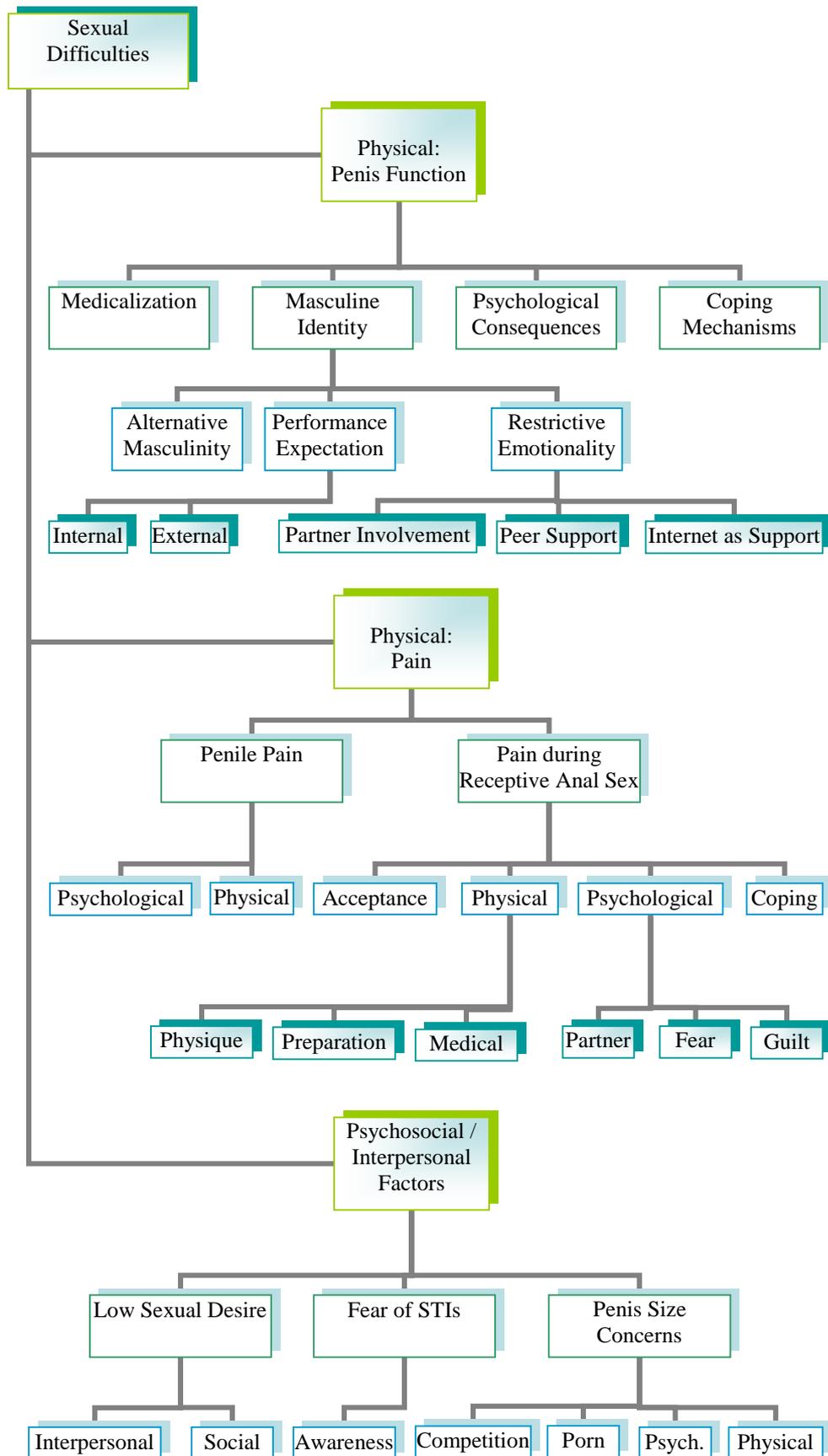


Figure 3.1  
Graphical Illustration of Themes and Sub-themes

A “functioning penis” was defined as one that could get erect, stay erect, and ejaculate (neither prematurely nor “too late”). These three difficulties were further examined in relation to medicalization, the role of masculine standards, psychological consequences (i.e., damage to confidence) and coping mechanisms (i.e., over-compensation).

**3.5.1.1 Medicalization.** Physical sexual difficulties were conceptualised in a very mechanistic way. For example, the phrases “get it fixed” and “get it sorted” were mentioned throughout. Pharmaceutical interventions such as Viagra (mentioned by 20 out of 52 participants) were the primary means of “fixing” physical sexual difficulties. The belief that physical sexual difficulties, erectile difficulties in particular, are “easy to address” (Alexander, 35 years, heterosexual, interviewee) and “rectifiable” (Eddie, 27 years, heterosexual, focus group 1) also surfaced.

Men who had taken Viagra for erectile disorder expressed a sense of relief after taking it. Members of focus group seven talked in detail about their experiences with the drug. Martin (52 years, bisexual, focus group 7) claimed he felt a “great sense of relief” when Viagra worked for him. He revealed how anxious he felt before taking the medication as he was afraid it might not be effective. While acknowledging that his erectile difficulties may be attributable to a “deeper” underlying psychological condition, he hoped the cause was a physical one. He explained that “within an hour and a half, there it [his erection] was looking at me, so I was more than delighted! Relief!” Ian (60 years, bisexual, focus group 7) agreed by saying “Yeah, it is definitely a relief to have that monster in your hand... seeing an erection is part of being a guy.” Martin further agreed and stated, “Sure the morning glory; that’s great to be alive again today, to look down and say ‘howya [sic] doing.’ It’s just one of those things.” Other participants with erectile disorder had positive experiences with Viagra. Frank (56 years, gay, interviewee) noted, “Well, I do have that problem [erectile disorder], but having said that I don’t feel it is such a problem. And it’s certainly not a problem with the blue pill.”

However, not all participants had positive views of Viagra. Although the common conception was there is an “easy solution” to physical sexual difficulties, some men expressed concerns over having to rely on medication for sexual activity. To illustrate, Colm (53 years, heterosexual, focus group 2) stated, “I think it would have a serious effect on my confidence anyway, serious... I don’t want to need any feckin [sic] Viagra.”

**3.5.1.2 Masculine Identity.** In five focus groups and 17 personal interviews, participants made a close connection between masculinity and the functioning of the penis (in terms of erection and ejaculation). Many men viewed penis functioning as an integral part of one's identity, and thus any impairment to sexual functioning was seen as a loss of one's identity as a man. To illustrate, Keith (33 years, heterosexual, interviewee) explained that "your sexual side is part of your identity... it's the most integral thing in one way; I mean, in one way, it is the most integral thing about yourself." Harry (55 years, heterosexual, focus group 3), who has experienced erectile difficulties due to low levels of testosterone, revealed the impact this experience has had on his identity. He stated "I was no Romeo or Don Juan but I'd still have a drive and I feel that drive now has diminished, and that bothers me because I want to feel [like] a full man." He considers his penis functioning to be a very important part of his identity, and asserted it has been vital to him throughout his life, from his teenage years, through his marriage, "and everything else." He disclosed that he feels as though he is bordering on depression because this very important part of himself is beginning to "wane." Harry further told of how his wife had made jokes about his sexual functioning (e.g., she told him "I hope you stay that way cos [sic] that's me off the hook"). This comment was followed with laughter from the group members. Harry's reaction to such comments was also to "laugh it off" but he revealed that deep down he thinks "I don't want this at all; I want to be right." For him, erectile difficulties have led to a loss of his sense of self and "masculine" identity.

Cormac (30 years, gay) and Ben (35 years, gay) in focus group five debated over masculine identity and a crystallised gay identity. According to Cormac, some gay men define themselves by the sexual roles and positions (i.e., top, bottom, versatile) they prefer. If, as a result of impaired sexual functioning, a gay man cannot assume the role he identifies with, he will not only experience a loss of identity as a man but also "a loss of identity because, like, they can't regard themselves as an active gay man." Ben agreed but went on to say "there are a lot of other things that make up who you are... I think society would probably make them feel like, you know, men are supposed to be kind of virile and shagging everything that moves and... if you're not doing that and can't do it ...I can kind of understand why somebody would feel less of a man."

*Alternative Masculinity.* In contrast to the views discussed above, in seven personal interviews and one focus group men spoke about how the functioning of the penis is not (and should not be) a representation of one's manhood. Interestingly, all eight participants who viewed penis functioning in this way were gay. For example, Pat (34 years, gay, interviewee) commented "It doesn't reduce them as a man if they're having trouble maintaining an erection." For some, erectile difficulties were viewed as common occurrences. When Gary (20 years, gay, interviewee) talked about how he would feel if a sexual partner could not get an erection, he described it as being "no problem at all, it's quite common." Scott (18 years, gay, focus group 6) detailed his view on penis functioning and masculinity: "I mean the whole masculine thing; I mean it's difficult to define... everyone defines it as, 'Oh, if you play more sport you're masculine;' some people say that literally if you have a bigger penis you're more masculine. There are loads of different definitions for it so how does that necessarily define it? So I personally wouldn't feel embarrassed by it [erectile disorder], sorry feel less masculine by it."

Frank (56 years, gay, interviewee) spoke in detail about his own personal experience with erectile disorder. Due to medical complications at a young age, Frank has always experienced some difficulty maintaining his erection. He has also used Viagra as an aid at various points in his life. When relaying his experience, he stated "I guess it's affected me but not terribly, no... I think that it's very interesting in terms of the fact that certainly if I'd been a straight man, this would have been something of a disaster." His reason for this comment was that penetrative sex seems to be "pretty crucial" in heterosexual sexual encounters. He believes there is a lot more flexibility in gay relationships, particularly in terms of individuals' sexual preferences. For example, he stated "there are other ways to have a sexual experience than somebody's got to have a stiff penis." Jamie (66 years, gay, interviewee), who also had some experience with erectile difficulties, reiterated Frank's thoughts on the issue. He spoke of instances where either he had personally experienced a difficulty or his partner was unable to get an erection. In his opinion, these experiences were never "a hugely big deal... one would hope that if you, I don't know, choose an intelligent sensitive partner... that the partner would always be understanding... I think, usually, there's a way around it." Evidently, for these participants, penis functioning is not an essential part of one's masculine identity. However, as this view was not shared by a majority of participants, the intricacies of

masculine identity were explored further in terms of their entanglement with physical sexual difficulties. The facets of masculine identity which were apparent throughout the transcripts were expectations to perform and difficulties in emotional expression.

***Performance Expectation.*** An important aspect of “masculine” identity which was identified by participants was the ability to perform sexually. Men felt there is an expectation to have an erect penis and to use this penis in a “performance” to sexually satisfy one’s partner. Participants identified various internal and external sources of performance expectations. It is important to note that these two sources are likely interlinked; that is, external sources regarding performance expectations may be internalized.

(a) *Internal Expectations.* Members of focus group one discussed internal expectations to perform. For example, Dominic (41 years, heterosexual) commented “certainly as a man because you feel like your maleness is somehow impaired when you’re not able to perform.” Eddie (27 years, heterosexual) agreed with Dominic’s statement, and offered his beliefs as a consequence of experiencing erectile difficulties: “your manness [sic] is definitely affected by it. I know I was affected. I felt inadequate and was unable to provide her with her needs at the time and, to an extent, it made me angry, not with her or the situation, but more with myself at the time.” Members of focus group one also discussed internal pressures to perform in relation to premature ejaculation. Dominic commented that a man experiencing premature ejaculation would not be living up to his own expectations “because, again, this comes back [to] a man’s own image of himself... and you’re not able to do what you are generally perceived to do so, again, that undermines the idea, the image in your head of being a man and doing what the man is suppose to be able to do.”

(b) *External Expectations.* Other participants perceived pressures to perform from external sources such as their sexual partner, society, and the media. To illustrate, Kevin (44 years, heterosexual, focus group 2) revealed that his wife expects him to have erections “through the night,” even whilst sleeping. His reaction to this expectation was “of course, I don’t have a raging erection all the time.” He believes his partner’s expectations to be unrealistic. When discussing premature ejaculation, Eddie (27 years, heterosexual, focus group 1) believed that because a man is unable to provide for his partner’s sexual needs, “you are not living up to her

expectations.” When asked what impact a sexual difficulty would have on a man, Luke (28 years, heterosexual, interviewee) answered: “As a man, that’s the one thing you should be able to do and perform. They can’t function as, ya [sic] know, society sees that they *have* to... a guy is *supposed* to get erect” and if they cannot get an erection, he commented, “he’d be failing in his duty to society.” Members of focus group four also discussed the impact of society, in particular the media, on their belief that sexual performance is an essential part of being a man. Henry (33 years, gay, focus group 4) spoke of the influence of media in enforcing these “manly ideals that part of you [your penis] has to work properly for you to be a man.” Andy (26 years, gay, focus group 4) agreed and went on to discuss the television shows *Queer as Folk* and *Sex in the City*, where he has noticed the characters “have fun all the time.” He highlighted “I don’t remember any time I’ve seen, you know, in anything, where a character wouldn’t be able to get an erection.”

***Restrictive Emotionality.*** Another significant subtheme of “masculine identity” which was raised by participants was difficulty in the expression of one’s feelings (i.e., restrictive emotionality). When discussing how men could cope with physical sexual difficulties, most participants believed that men would “suffer in silence” (Andrew, 29 years, heterosexual, interviewee). The common perception was that men would not be willing to discuss sexual difficulties with their partner, their friends, or their doctor.

These beliefs conform to the (masculine) social norm that men should not talk about their emotions or their problems (e.g., Courtenay, 2000). For example, Austin (25 years, heterosexual, interviewee) remarked “men are pretty emotionless creatures and they don’t express themselves very much so they just get on with it.” Likewise, Keith (33 years, heterosexual, interviewee) explained how he feels men are very “stoic, but stoic to a kind of negative degree,” in that they “hold everything inside.” The rationale provided for restrictive emotionality was, again, linked to the perceived “masculine ideal” of having a “functioning penis.” Participants revealed men would be too embarrassed to deviate from this “ideal.” Luke (28 years, heterosexual, interviewee) reflected on this social norm when he spoke about the difficulty associated with seeking help for sexual difficulties because, according to him “as a man that’s the one thing you *should* be able to do and perform.” In addition, Gary (20 years, gay, interviewee) asserted that there are “massive

psychological issues,” particularly embarrassment, associated with visiting a doctor to say “my penis doesn’t work properly; I don’t know what’s wrong with me.”

Participants recognised that men *should* seek help from a doctor if they experienced a physical sexual difficulty; however, most participants admitted that generally men would not be willing to do so. Again, this reflected the idea that it is not “manly” to seek help from a doctor for sexual issues. Andy (26 years, gay, focus group 4) stated “whenever you go to the GP it’s because you’re bleeding or near dead you know, it’s not about going to talk about your problems usually... you’re a man and you should be out all day cutting trees and you know going and talking about your feelings just doesn’t fit in.” Members of focus group seven also reflected on this issue. For example, Ian (60 years, bisexual) commented “I don’t think people would be running to their doctor with this [sexual difficulty]. It’s a male thing. You don’t go to the doctor with something like that; you go if you’ve got a stake in your chest and it needs pulling out.” This was followed by agreement from all group members. Other sources of support were identified (i.e., one’s partner, peers, and the Internet) and men’s willingness to avail of this support and the perceived usefulness of this support were discussed.

(a) *Partner Involvement.* The impact of restrictive emotionality on one’s relationships was examined. Men spoke about how, ideally, partners *should* be able to discuss their problems and receive reciprocal support from their partner, but the reality was different for many participants. For example, Graham (44 years, heterosexual, focus group 1) revealed that he “lost out in a relationship because he was not willing to admit he had a problem [erectile disorder].” He let his partner believe it was her fault, instead of admitting his “weakness.” He stated “instead of just doing the proper thing and going to a doctor and sorting it out, I didn’t dissuade her of the idea that it was her fault and not mine for the simple reason that I just couldn’t put my hand up and just say what the fact was.” Similarly, Oliver (36 years, heterosexual, interviewee) relayed his experience with erectile difficulties and how his inability to talk to his partner has made his situation worse: “what doesn’t help me is that I don’t talk about things. I bottle things up and keep it to myself.” He revealed that taking part in this study has helped him as he was given the opportunity to discuss his sexual issues. He acknowledged he would find it helpful to talk to his wife but stated “it’s not something that I would do because she’s not a very confident person as it is with that type of thing [sex], it’s not gonna [sic] help her.” As a result

of putting her emotions before his, he feels “it’s something that I just have to try and deal with myself and move on from.”

(b) *Peer Support*. The willingness of men to discuss their sexual difficulties and seek support from friends was discussed. While recognising that peers could serve as a possible means of support, most participants explained they would not discuss this topic with their peers. To illustrate, Alexander (35 years, heterosexual, interviewee) commented “your friends could help you through it... well maybe not *my* friends (*laughs*), you know, but understanding friends cos [sic] we just make jokes about everything, cos [sic] maybe we’re uncomfortable.” Graham (44 years, heterosexual, focus group 1) commented: “most of my male friends would probably talk more about knitting [than erectile disorder].” The majority of participants stated that telling friends about sexual issues would negatively affect their self-confidence and “status” as a man (highlighted in 18 personal interviews and four focus groups). Andrew (29 years, heterosexual, interviewee) explained that “nobody would actually come out and say that [they have a sexual difficulty] cos [sic] they would find it a bit embarrassing cos [sic] it would be the whole fear of getting slagged about it and having like the mickey taken out of them.” Larry (34 years, gay, interviewee) detailed how men would converse about sexual issues but only in relation to the “better aspects of sex... that you were actually with someone and you got off with someone.” He went on to say it would be a different situation to tell your friends about a negative experience: “every guy will tell ya [sic] about his good sex life, but they won’t ever tell ya [sic] about his bad sex life.”

In contrast, some of the participants revealed that, as they matured, they became more confident in discussing sexual difficulties. This may be attributed to the preconception that sexual difficulties are associated with older age. For example, many believed erectile disorder, in particular, is associated with age and should be expected to occur later in life. For example, Graham (44 years, heterosexual, focus group 1) commented, “I suppose as we get older we get more comfortable and, as we share experiences with older friends, the likelihood of them having [similar] experiences is also more likely. Maybe that’s something: the openness with friends as you get older is something.”

(c) *The Internet as Source of Support*. Using the Internet to acquire information and support was identified throughout the transcripts. Instead of seeking support and guidance from partners, friends, or a medical professional, participants

asserted that a more “practical” option would be to use technology (i.e., the Internet) to “self-diagnose.” Drawing on information available online also enables men to remain anonymous and, thus, hide their “sexual failings” from their partner or peers. For example, Harry (55 years, heterosexual, focus group 3) commented, “all people have to do nowadays is Google ‘erectile dysfunction’ and you’d be there for hours; instead of consulting with a pal, you can consult with Google as your pal.” Likewise, Ted (32 years, bisexual, interviewee) explained “I would assume, firstly, he would go and check the Internet before he goes and speaks to a doctor or anything, try and self-diagnose.” This desire to be self-reliant reflects another societal masculine standard, and reinforces the norm that men should be too embarrassed to admit to others that their penis is not “fully functioning.”

**3.5.1.3 Psychological Consequences.** The main psychological consequence of experiencing physical sexual difficulties was damage to one’s confidence, which was represented by distress, embarrassment, and depression. This impact on one’s confidence was not solely due to a loss of sexual abilities, but also due to feeling a loss of masculinity as discussed previously.

When describing how distressing it would be to experience sexual difficulties, Jamie (66 years, gay, interviewee) commented, “I think that’d be pretty desperate. It’d be like having eyes and not being able to see or something.” Tim (26 years, heterosexual, interviewee) further reinforced this point when he explained that it would “break a man” because he would feel “redundant.” Andrew (29 years, heterosexual, interviewee) explained that if a man could not perform sexually it would be “like a serious kick to them, kinda [sic] like the carpet being pulled underneath their feet, so they’re kind of soul destroyed if they can’t.” Additionally, when Alexander (35 years, heterosexual, interviewee) described how distressing a physical sexual difficulty would be for him, he claimed “if you were a caveman and you couldn’t do it, you’d probably just throw yourself into the fire, you know, if it had been invented, or into a river. I suppose that’s the handiest cos [sic] it’s a primal instinct to do it [have sex]”.

Embarrassment could be felt for various reasons. First, a man would be embarrassed because he would feel that he had failed himself as a man. When relaying his own experience with erectile difficulties, James (22 years, heterosexual, interviewee) revealed, “it’s quite shameful, or humiliating, embarrassing.” Second, some men thought it would be embarrassing for their sexual partner to know of their

perceived failings as a man. For example, Fred (24 years, gay, interviewee) stated “if there was a case that happened to a partner of mine then I’m sure it was very embarrassing [for] them if they were in the company of another person.” Third, many men spoke of the embarrassment of having to explain a sexual difficulty to a doctor; “you have the embarrassment of having to go to your doctor and saying, basically admitting, to – most likely – another man that you can’t perform sexually, which would cause a lot of anxiety in life” (Aaron, 25 years, bisexual, interviewee).

**3.5.1.4 Coping Mechanisms.** When asked about the consequences of a physical sexual difficulty, many participants suggested that men would likely overcompensate for the perceived loss of “manliness.” As a result of feeling less masculine, some suggested that emotions, such as anger and rage, would increase and would manifest physically: “Well, if I can’t maintain an erection then I’m *obviously* not a man and I can’t do other manly things like lifting boxes, I dunno [sic], so it’s probably gonna [sic] go the other way and they are gonna [sic] start overcompensating in the rest of life and coming across as being possibly over[ly] aggressive to show that they are a man” (Aaron, 25 years, bisexual, interviewee). Keith (33 years, heterosexual, interviewee) also spoke of increased hostility and violence having a negative impact on one’s relationships when he stated, “Find another way to prove your manliness; go and beat the head off somebody, or beat your wife.”

Other tactics to prove one’s manliness were discussed, such as becoming muscular, immersing oneself in sport, abusing steroids and consuming excessive amounts of alcohol. For example, Keith (33 years, heterosexual, interviewee), commented “another physical display, become big, become muscular, become violent, play sport... something like that I think, something to prove, drink a tonne of pints, prove, pull a load of girls always, keep being involved in promiscuous affairs even though you’re not actually getting to the point but at least you’re proving which is kinda [sic] self-defeating though, but I’d imagine those kind of things happen ya [sic] know, I would say that.”

None of the participants reported engaging in these over-compensation mechanisms, but they contemplated why they expected other men would react this way to physical sexual difficulties. The rationale provided was that a man would not want others to know about his perceived “failings” as a man. Some believed that one’s sexual abilities are not visible to others (except a sexual partner) and,

therefore, one's sexual deficiencies can be hidden through appearing "manly" in other areas of life. Participants appeared to believe that by becoming successful in activities that are perceived as highly masculine (e.g., playing sport), a man offers "proof" to others – and, critically, to himself – that he is still a "man." James (22 years, heterosexual, interviewee) explained that if your ability to perform sexually is "taken away from you" through a physical sexual difficulty, then that feeling needs to be counteracted in some way to "make it seem, I'd say both to yourself and to whomever is looking at you appearance wise, that you are the man...that you're convincing yourself that you are, when ya [sic] know deep down that there's less to it."

### **3.5.2 Physical Sexual Difficulties: Pain**

Two other possible physical sexual difficulties which emerged throughout the transcripts were related to pain during sexual activity. These were penile pain and experiences of pain during receptive anal sex for gay men.

**3.5.2.1 Penile Pain.** Experiences of penile pain were introduced by participants in seven interviews and one focus group. When penile pain was not broached by the participants, the interviewer initiated discussion on the topic. Penile pain was described by participants as pain of the penis caused by a tight foreskin (also known as phimosis). Five participants had personally experienced phimosis and had a circumcision as a result. In all cases, this difficulty was viewed as a medical condition which could be "surgically sorted out" (Gregor, 46 years, gay, focus group 6). Compared to other physical sexual difficulties discussed, penile pain was deemed "an easy enough one to sort out" because there is a surgical solution (Ted, 32 years, gay, interviewee). Additionally, the physical and psychological impacts of penile pain were explored by participants.

**Physical Impact.** Phimosis was considered to have a major impact on one's sexual functioning, mainly because sexual activity, including masturbation, would be extremely painful. According to Albert (23 years, gay, interviewee), assuming the insertive role in anal sex would be incredibly difficult "because there's a lot of pressure being put on that particular part of the body." In addition, Peter (28 years, gay, interviewee), who was circumcised because of his tight foreskin, found anal sex "nearly impossible" and consequently has avoided that sexual behavior; "even now [after circumcision] I don't particularly like it, maybe because I just wasn't used to it when I was younger." Phimosis also was affiliated with difficulties in reaching

orgasm and maintaining an erection. For example, Robert (27 years, heterosexual, interviewee) expressed having difficulty reaching orgasm, which he attributed to experiencing penile pain over a long period. Even after having a circumcision, he believes he is still psychologically scarred from his experience. Fred (24 years, gay, interviewee) gave his account of his relationship with an ex-partner, who had phimosis and, as a result, found it very difficult to maintain his erection.

***Psychological Impact.*** The psychological impact of phimosis also was raised; participants associated frustration and embarrassment with this difficulty. For example, Jason (24 years, gay, interviewee) commented it would be “very frustrating because obviously you can get aroused and get an erection but then like, obviously, you can’t like really ejaculate.” Jason went on to discuss his relationship with a man who had a “non-retractable foreskin.” Jason found it very frustrating to have a partner with this condition because he felt he could not touch him sexually without causing him pain. Trevor (23 years, gay, interviewee) also spoke of his relationship with a previous partner who had phimosis. In this relationship, he felt as though his sexual needs, as well as his partner’s needs, were not being met: “they’re not enjoying it so then I’m not really enjoying it.” However, he did not discuss this matter with his partner as he felt his partner was too embarrassed to discuss the topic. He found the experience very “puzzling” because without being able to discuss the topic with his partner, he felt there was nothing he could do to resolve the situation.

Peter (28 years, gay, interviewee), who had this condition, conveyed his embarrassment at having experienced it: “that’s why I didn’t get circumcised earlier; I was too embarrassed to go to the doctor basically.” Before he started having sex with men, he didn’t realise he had a problem; “I kind of thought that my penis was normal, I thought that’s the way everyone else was, and even the first few times I’d slept with guys, I thought that it was something wrong with their penis, even after the fourth or fifth time.” It was not until he was with someone who looked at his penis with “disgust” that he realised there was a problem. The emotional hurt he felt as a result of that experience motivated him to seek help. He also spoke of the first time he ejaculated after the surgery which caused the stitches in his penis to burst. He was too embarrassed to go back to the hospital to seek help. Johnny (50 years, bisexual, focus group 7) described his experience with penile pain: “Once I was circumcised it felt like I was grown up, I was dealing with the full deck! (*Laughs*). I was slightly embarrassed by the penis that I had. I felt it wasn’t the way that it

should be... Because I wasn't having anal sex, or penetrative sex, there wasn't an occasion where it would have caused a problem. When I started having experiences with men, that's when I realised something was wrong... I'm absolutely thrilled I had it done, it's fantastic."

**3.5.2.2 Pain during Receptive Anal Sex.** Half of the gay interviewees introduced the topic of pain during receptive anal sex as a possible sexual dysfunction or sexual difficulty; interestingly, it was not raised by any focus group participants, or by the heterosexual participants. In cases where it was not mentioned by participants, the interviewer introduced the topic later in the discussion (12 transcripts). Participants expressed different views on how pain during receptive anal sex should be classified. Fourteen participants (eight interviewees and six focus group members) believed it to be a sexual dysfunction; nine participants (three interviewees and six focus group members) classified it as a sexual or interpersonal difficulty; and three interviewees were undecided. This reflects disagreement over its classification found in the literature (e.g., Hollows, 2007). One participant, for example, compared it to erectile disorder. He observed that erectile disorder is "seen as there is something wrong with me;" however, experiencing pain during receptive anal sex "isn't your fault... these things just happen" (Aaron, 25 years, bisexual, interviewee).

It must be noted that experiencing pain during receptive anal sex was not considered an issue for all participants and many spoke about flexibility in their sexual behavior. Jason (24 years, gay, interviewee), for instance, explained if anal sex "isn't working, you can just do other things and it's probably not a big deal." Larry (34 years, gay, interviewee) believed that anal sex is not part of every gay man's sex life but that would only be for "a very small amount of people." Conceptualisations of anal pain (i.e., acceptance), the physical and psychological determinants of pain, and the most common coping strategy (i.e., avoidance) for dealing with pain were identified as subthemes of "pain during receptive anal sex."

**Acceptance.** Pain during receptive anal sex was conceptualised as "normal" by several participants and was seen as something to be expected. To illustrate, Gary (20 years, gay, interviewee) commented, "It's nothing that is to be embarrassed by, ya [sic] know, some people can and some people can't." Peter (28 years, gay, interviewee) shared similar thoughts on the issue: "I don't think there's anyone who can say that they haven't felt pain, it's actually when the first time you do it or, well

even right up to any time you do it, it's always kinda [sic] sore." According to Fergal (23 years, gay, interviewee) "with the best will in the world, and doing everything properly, and using appropriate lubrication and so on, you're still going to have some degree of pain during penetrative sex." The explanation for this opinion was that the anus is not perceived as an appropriate sex organ, or "it is not made for sex" (Aaron, 25 years, bisexual, interviewee). For example, Jamie (66 years, gay, interviewee) spoke of how someone experiencing pain during receptive anal sex would not be willing to seek help from a doctor because of the view that the anus "isn't a proper sex organ." He compared this experience to a women suffering from vaginal pain during sex. He believed pain during vaginal sex was a typical occurrence and "not completely off the planet," unlike pain during receptive anal sex. Others mirrored this opinion with comments such as "the ass isn't exactly built for stuff going up it" (Peter, 28 years, gay, interviewee) and "it's a muscle that shouldn't be doing that" (Albert, 23 years, gay, interviewee).

***Physical Determinants of Pain.*** Various physical factors, which could influence one's experience of pain, were highlighted such as: (a) one's physique; (b) sexual preparation; and (c) medical conditions.

(a) *Physique.* The experience of pain during anal sex was attributed to physical characteristics of the receptive partner (i.e., having a tight anus) or of the insertive partner (i.e., having a large penis). For example, Fred disclosed his inability to have anal sex with his ex-partner because "his arse wasn't big enough basically to take it." He voiced his dissatisfaction with their sexual encounters when he said they were "as boring as watching paint dry." Aaron (25 years, bisexual, interviewee) described his experiences of anal sex as being "quite painful, especially if the person is extremely big." As a result, he has often felt anxious before sexual interactions with a new partner. If the new partner is a top and has a large penis, he admitted he would think "phff, this [sex] isn't going happen."

(b) *Preparation.* Practical preparation techniques for anal sex were discussed by the majority of participants as being essential for pain free anal intercourse, such as the need to use "plenty of lubrication" (Peter, 28 years, gay, interviewee) and loosening the anus using toys or digital stimulation (i.e., "get fingered beforehand to loosen you up": Cormac, 30 years, gay, focus group 5). Poppers (i.e., alkyl nitrites) also were suggested to help relax anal muscles but some men expressed concern over their use. For example, two participants (Fred, 24 years, gay, interviewee; Andy, 26

years, gay, focus group 4) spoke of men being overly reliant on poppers. To exemplify, Andy commented, “It seems like there’s quite a large number of guys on the scene who would have this kind of need for poppers, you know and are kind of, unable to have sex without them.” Additionally, Albert (23 years, gay, interviewee) expressed concern over the lack of information on the long term effects of using poppers and revealed his usage resulted in a skin rash.

(c) *Medical Conditions*. Other participants mentioned that pain could be caused by medical issues such as colon cancer, haemorrhoids or anal warts. Fergal (23 years, gay, interviewee) conversed about his partner who had haemorrhoids which caused “horribly excessive pain” during sexual intercourse. Participants highlighted such cases should be assessed by a doctor but, again, the reluctance to discuss this issue with a medical professional was apparent.

***Psychological and Interpersonal Determinants of Pain***. Several psychological and interpersonal factors which could influence the experience of pain were described, specifically: (a) one’s sexual partner; (b) fear of pain; and (c) sexual guilt.

(a) *Sexual Partner*. The presence of a considerate and trustworthy sexual partner was considered to be of upmost importance when faced with pain during anal sex. According to the participants, having a partner who understands the possible issues associated with anal sex allows men to actively deal with the experience of pain more effectively. Through sexual flexibility (e.g., engaging in a variety of sexual practices together) and mutual trust, a natural state of relaxation could be achieved which would aid in minimising anal pain. Fred (24 years, gay, interviewee), for example, has found anal sex “extremely painful” which he attributed to being unable to relax with a stranger (or a casual sexual partner): “On one occasion I tried doing the bottom, being the bottom and that experience did not go well... because of my pain threshold definitely... I wasn’t relaxed enough.” Other participants reinforced the idea that when a man experiences difficulties with anal pain, his partner plays a vital role: “You need to be completely relaxed and completely trust the person you’re with” (Ian, 60 years, bisexual, focus group 7); “If someone is rough and they just kinda [sic] shove it up there then your muscles don’t have time to relax” (Peter, 28 years, gay, interviewee).

There appeared to be a general understanding that pain can often be a part of anal sex (although not always) and the couple can work together to resolve the issue,

usually. Participants in this study demonstrated how they would understand, should this situation occur. For example, Larry (34 years, gay, interviewee) commented that he “wouldn’t expect anyone would necessarily have sex, if they’re experiencing pain.” Some participants, who relayed their own experience with pain during anal sex, made statements such as “It’s not your fault” and “These things happen.”

(b) *Fear of Pain*. For some men, the issue raised was the fear of pain as opposed to actually experiencing pain. For example, Sean (25 years, gay, interviewee) remarked, “I know people who haven’t experienced that at all and who would shy away from it [anal sex] because they think it is going to be painful.” Thus, without ever having engaged in anal intercourse, some men may avoid that activity solely due to the fear of being hurt physically. Some participants suggested that this is more common in younger men who have less experience and less knowledge of participating in anal sex. Others suggested that the expectation of pain will result in pain: “They are going to be gripping the table, like having a tooth pulled” (Gregor, 46 years, gay, focus group 6).

(c) *Sexual Guilt*. One participant discussed the possibility that if individuals are brought up to believe that it is “wrong for two men to have sex,” the experience of pain during anal sex may reinforce that view. This, in turn, could lead to feelings of guilt about their sexual behavior and their sexuality: “they’re not supposed to be doing it [anal sex].” Ultimately, he concluded it can cause a constant internal struggle and real “psychological battle” for individuals (Henry, 33 years, gay, focus group 4). This conclusion was met with agreement from fellow participant Jimmy (31 years, gay, focus group 4).

*Coping Mechanisms*. For a substantial number of participants (18 men in total), the most commonly suggested method for coping with pain during receptive anal sex was to avoid sex. For example, when Albert (23 years, gay, interviewee) was asked how one might deal with pain during sex, he responded with “possibly not doing it, avoiding it... but yeah I suppose the... primary way would be to avoid it.” Some men mentioned that this would be a very common response for someone who had a painful experience during their first time, which as a result would “put them off” receptive anal sex in the future. Cormac (30 years, gay, focus group 5) summarised this view succinctly when he said: “If you stick your hand into the fire and feel pain, you are hardly gonna [sic] go back and do it again.”

### 3.5.3 Psychological and Interpersonal Sexual Difficulties

In contrast to the physical sexual dysfunctions and difficulties discussed above, psychological and interpersonal issues, which could have an influence on physical functioning, also were explored. The broad themes identified within this section are low sexual desire, sexually transmitted infections, and concerns over penis size.

**3.5.3.1 Low Sexual Desire.** A low sexual desire (described as complete absence of sexual interest) was suggested by participants in eight qualitative investigations. Since low sexual desire is classified by the DSM-IV-TR (APA, 2000) as a dysfunction, the interviewer introduced it to the conversation when it was not broached by the participant. Seventeen participants classified the experience of low sexual desire as sexually dysfunctional, whereas 35 participants believed it to be some form of psychological or interpersonal issue such as stress, tiredness, or lack of attraction to one's partner.

Contrasting views emerged in how men conceptualised low sexual desire. Several participants affirmed that low sexual desire was not “natural.” For example, Alexander (35 years, heterosexual, interviewee) expressed: “We’re designed to have sex, you know, it’s...like hard coded into our flipping brains or DNA or something.” Some men asserted it was not possible for a man to have a low sex drive: “I don’t see how, though – now, this is just from my own thing – how men would actually be like that, but that’s just me... I have never heard of it” (Andrew, 29 years, heterosexual, interviewee). Low sexual desire was described as being a “female issue” by several participants. When Oliver (36 years, heterosexual, interviewee) was asked to discuss the issue, his response was “not from a man’s point of view, obviously, like, I suppose it’s more a woman thing than, a lack of sex appetite, than a man[’s]. I wouldn’t say it’s normal to have a lack of sexual appetite from a man’s point of view... it’s not normal for a man.” One participant expressed disbelief at the notion of low sexual desire: “I can’t imagine not wanting to have sex! I mean I’m over 60 now but I still, within half an hour, I can go somewhere and I can have sex. I like to have sex at least once or twice a day” (Ian, 60 years, bisexual, focus group 7). In comparison, other participants described low sexual desire as a “natural occurrence” and highlighted that not everyone has a high sex drive. Aaron (25 years, bisexual, interviewee), for example, referred to individuals who are asexual (i.e., lack of attraction to others or lack of interest in sex) and described low sexual desire as

being “inbuilt” and “some people are just like that.” Fergal (23 years, gay, interviewee) similarly commented “that’s not a problem, that’s a personality element.” The identified subthemes of low sexual desire were the psychological and interpersonal impact; and societal influences.

***Psychological and Interpersonal Impact.*** In terms of the psychological impact of low sexual desire, many thought it would not have any major impact on the person experiencing it: “It wouldn’t be a dysfunction for the person suffering from it because it’s not interfering with their sex life because they just have no sex drive” (Joe, 25 years, heterosexual, interviewee). Mitch (31 years, heterosexual, interviewee) further highlighted: “If it’s just with someone who’s single then [it] probably doesn’t affect them that much.” To complement this view, Ted (32 years, bisexual, interviewee), a single man, revealed that he does not have a “huge sex drive” but he does not consider it to be an issue for him. However, sixteen participants inferred that the interpersonal impact would be greater. The perceived consequences for the partner of someone with low sexual desire were feelings of anger, frustration, resentment and unattractiveness. Several participants believed that low sexual desire was the result of not being attracted to one’s partner. To illustrate, Peter (28 years, gay, interviewee) spoke of having experienced low sexual desire because he was not sexually attracted to his partner. As a result, his partner ended their relationship because “he still wanted to have sex” but Peter did not. In a separate interview, Fred (24 years, gay, interviewee) divulged his experience of being the partner with the higher sex drive. He described sexual activity with his ex-partner as “very, very boring” and revealed that he felt “very demoralised” because his sexual needs were not being fulfilled. He attributed their difficulties to the age difference between himself and his partner. As a result of this relationship, he expressed concern with the process of aging: “I’m dreading to think that I might be that age in a few years time if that’s what it’s going to be.”

***Societal Influence on Men’s Interpretation of Low Sex Drive.*** The influence of societal standards of masculinity repeatedly emerged when men were discussing low sexual desire. The societal expectation raised was that a man should always be ready for sex. Many who described low sexual desire as dysfunctional did so because it is not “normal” to deviate from this societal expectation. For example, Jack (32 years, heterosexual, interviewee) commented, “Men are kind of, if you look at the general stereotype that is out there, always interested in having sex, all of the time,

and that ... women, on the other hand, ... need to feel confident or happy or loved or whatever in order to want sex.” Furthermore, according to Austin (25 years, heterosexual, interviewee), men feel as though they should have a “strong sexual appetite, usually stronger than [their] partner.” He explained that it is expected for women to turn down sex from their partner: “You always see that stereotype of they’ve a headache or washing their hair.” However, a man cannot turn down sex: “You have to be a man. You have to live up to that expectation. You have to be able to go whenever you’re demanded to basically.” He also revealed that some men will have sex in spite of not “feeling up to it just to fulfil their position [in society].”

**3.5.3.2 Fear of Sexually Transmitted Infections.** One theme, which was identified throughout the transcripts with gay men, concerned sexually transmitted infections (STIs); in particular, fear associated with contracting and transmitting STIs. Ten interviewees and one focus group discussed this issue as being a sexual difficulty which gay men could experience. This issue was not raised by heterosexual participants.

Three ways in which STIs could instil fear in men were discussed. First, men talked about the fear of contracting an STI. For example, Aaron (25 years, bisexual, interviewee) explained that, although he is aware that there is a simple solution to this type of fear (i.e., the use of protection), it is still a major concern particularly for “gay guys cos [sic] they constantly worry that people have HIV and are constantly worried that they are gonna [sic] get something from other people.” When discussing this issue further, Gary (20 years, gay, interviewee) believed that fear of contracting an STI could have damaging consequences for individuals, stating that these feelings can cause a “sexual moment” to be ruined. Jamie (66 years, gay, interviewee) believed that such “paranoia” leads people to alter their sexual behavior; to engage in what he termed “a more distant type of sex” as opposed to “relaxed sex.”

Second, men talked about the fear of transmitting an STI to others. In one focus group, Leo (30 years, gay, focus group 6) and Scott (18 years, gay, focus group 6) conversed about the effect of having contracted an STI. Scott believed that someone who has been infected could be inhibited from having sexual relations, or “even entering a relationship with somebody.” Leo mirrored these beliefs but also thought this type of fear to be “irrational...you could be afraid of getting knocked down by a bus so you won’t cross the road.”

Third, the fear of being ostracised as a result of having an STI was discussed. STIs were viewed as taboo and not something participants would generally discuss with others. According to Ted (32 years, bisexual, interviewee), having an STI would be “horrendous” and a “huge burden” as a result of the stigma associated with STIs. In addition, Aaron (25 years, bisexual, interviewee) spoke of his experience of having contracted two STIs. When he informed his previous sexual partners, he stated that “they were just like beyond embarrassment, they were so scared that I was gonna [sic] go tell everybody else that I had it and they would be, like, ostracised.”

**Awareness.** A subtheme identified in relation to STIs was levels of awareness. Many participants believed there is more awareness of STIs among gay men in comparison to heterosexual men. Aaron (25 years, bisexual, interviewee) believed that heterosexual men “use condoms because of pregnancy; they don’t think that there is anything else that can be gotten [sic] from it, whereas *obviously* you can get a lot more things.” He added that heterosexual men do not believe HIV is a relevant issue for them, in contrast to many of his gay acquaintances who attend STI clinics for regular testing. According to Aaron, one of the reasons for high levels of fear of contracting STIs among gay men is due to this increased awareness.

Lack of awareness of STI-related issues also was discussed. For example, Fred (24 years, gay, interviewee) expressed embarrassment as a result of his lack of awareness. He relayed his thought process around shaking hands with a man that he later found out was HIV-positive. Due to his lack of knowledge about HIV transmission, he reported being afraid of this man and commented “without sounding bad, I nearly shit myself.” He believed his fear to be dysfunctional, and stated “I don’t think it’s something that’ll go away till [sic] they find a cure for HIV.” This example demonstrates how a lack of awareness can also instil fear of contacting STIs.

**3.5.3.3 Penis Size Concerns.** Concerns over penis size emerged as a psychological influence on men’s sexual functioning in nine qualitative investigations (six interviews and three focus groups). The desire for a bigger penis was believed to be a natural and common concern. For example, Aaron (25 years, bisexual, interviewee) stated “everyone thinks that their penis is too small.” Peter (28 years, gay, interviewee) similarly commented, “I think most guys probably aren’t confident about the size of their penis, even like guys who are average. I just think like most people would like a bigger penis.” The sources of these concerns (i.e.,

competition with sexual partners for gay men; pornographic films), in addition to the psychological and physical impact of being concerned about one's penis size were discussed throughout the transcripts.

***Competition and Gay Men.*** The main difficulty expressed by gay participants in relation to penis size concerns occurred due to physical comparisons with their sexual partners. As same-sex partners have the same anatomy, in contrast to other-sex partners, there is an obvious "direct comparison" (Aaron, 25 years, bisexual, interviewee). Aaron, who has dated both men and women, felt less self-conscious about his penis size when he was with women, compared to when he was with men. When speaking of his sexual relations with women, he said "there's not a direct comparison when you've no clothes on cos [sic] she obviously has no penis, you would hope!" In his experience with men, "everything's a competition," including physique, kissing, sexual performance and penis size, which can cause anxiety for some gay men. Larry (34 years, gay, interviewee) conveyed similar concerns, by stating that when two men are together, if one has a bigger penis than the other, "it could make you feel inferior."

***Pornography.*** When articulating possible reasons for why men have concerns about penis size, several participants held the pornography industry responsible. Similar to comparisons between same-sex partners discussed previously, many participants spoke about comparisons between their penis and those depicted in pornography. For example, Peter (28 years, gay, interviewee) stated, "I'd say it's probably porn's fault actually because all men in porn have like massive penises and most guys kind of compare themselves to them." Furthermore, Tim (26 years, heterosexual, interviewee) referred to large penises shown in pornography, and described the actors as resembling a "tripod." Members of focus group four also expressed concerns about pornographic films and penis size. Andy (26 years, gay, focus group 4) maintained that there is an expectation to perform identically to the ideals (i.e., physique, performance) commonly viewed in pornography. If one cannot meet these standards, "there's something wrong with you." His comment was met with agreement from other members of the focus group. Additionally, trying to meet these standards can greatly affect one's sexual performance and detract from one's sexual satisfaction (Aaron, 25 years, bisexual, interviewee).

***Psychological Impact of Concern over Penis Size.*** The negative psychological impact of being concerned about one's penis size was discussed. Feelings associated with these concerns were inadequacy, anxiety, and embarrassment. The perception that a large penis is needed to sexually satisfy a partner was evident throughout the transcripts. Men spoke about feeling inadequate if their penis was not deemed large enough to be able to please their partner: "is it an adequate size for a woman, or what will she think when he takes his shirt off and his pants off, will she laugh?" (Andrew, 29 years, heterosexual, interviewee).

Peter (28 years, gay, interviewee) discussed how anxiety and embarrassment associated with penis size could prevent a man from seeking out a sexual partner: "it stops them trying to sleep with people or having a relationship or anything because they don't think that any girl or man would want to be with someone that has a small penis." According to Peter, this would have a further negative impact on other areas of one's life, and possibly lead to one engaging in self-destructive behavior such as "alcoholism or drug abuse."

In contrast to the belief that a large penis was needed to satisfy a partner, some gay men preferred their sexual partner to have a smaller penis than their own. Various reasons were posited for this. Peter (28 years, gay, interviewee) made it clear that a large penis is not always desirable: "I would much rather sleep with a guy if he had like six, seven inches, to someone who had ten or eleven, because it would just be painful and not pleasant." Members of focus group four also spoke about the desire to have a sexual partner with a small penis. Their reasoning for this desire was to boost one's own confidence: "it just kind of makes them more secure about themselves" (Jimmy, 31 years, gay, focus group 4). Interestingly, although some men believe a large penis is needed to sexually satisfy their partner, they themselves do not need their partner to have a large penis for their own personal satisfaction.

***Physical Influence on Sexual Functioning.*** Concerns over penis size were deemed to have a major influence over one's physical sexual functioning and were conceived to be a causal factor in a variety of sexual dysfunctions. For example, Aaron (25 years, bisexual, interviewee) commented if someone is concerned about the size of his penis, he is less likely to enjoy sex and, therefore, may not be able to reach orgasm. Fergal (23 years, gay, interviewee) noted that, "people could feel they're inadequately endowed and have a lot of hang-ups from that, and that would

feed back into sexual dysfunction.” Larry (34 years, gay, interviewee) further explained that if a man feels self-conscious about his penis size, whether it be considered too big, too small, too thick, or too thin, “it can certainly lead to a whole self-confidence issue, and obviously that would, I think that even in itself, could lead... to either your premature ejaculation or you’re unable to get an erection in the first place.”

### **3.6 Discussion**

Men’s conceptualisations of sexual dysfunctions and difficulties were explored qualitatively. Two intercorrelated strands of conceptualisations were identified: physical difficulties (penis function and pain) and psychological/interpersonal difficulties.

Overall, the results suggest that the current diagnostic system of sexual dysfunction does not cover the full range of sexual difficulties experienced by gay men. This supports previous quantitative research in the area (Cove & Boyle, 2002; Sandfort & de Keizer, 2001). In particular, the experience of pain during receptive anal sex emerged as a sexual dysfunction/difficulty for some gay men. Similar to Hollows’ (2007) argument, it is unclear whether this issue should be considered a dysfunction per se, but it is clearly an issue facing some gay men. Perhaps trying to define pain during receptive anal sex in terms of “dysfunction” or “non-dysfunction” may not be as important as understanding the impact this pain has on individuals, and how it relates to general health and well-being. (The following chapter will examine this question.)

Although some differences were noted between gay and heterosexual participants (i.e., experiences of pain during receptive anal sex; fear of contracting STIs), similarities also were apparent. For example, across the transcripts, physical sexual difficulties were viewed in a mechanistic manner; penis size concerns were common; and experiences of penile pain were similarly described. One cannot conclude that gay and bisexual men are more sexually dysfunctional than heterosexual men (or vice versa); however, evidently they may be affected by different issues, such as the fear of contracting and transmitting STIs.

The pivotal role of societal standards of masculinity was evident for both physical and psychological/interpersonal difficulties. This result supports previous research linking penis functioning and masculinity (Brubaker & Johnson, 2008; Potts, 2004; Rubin, 2004; Zilbergeld, 1992). An “ill performing” penis is seen as a

failure of masculinity because men feel they are not living up to cultural expectations of “being a man” (Tiefer, 1986; Zilbergeld, 1978, 1992). Abiding by the standards of hegemonic masculinity can have dangerous consequences for men’s psychological functioning (Goldberg, 1976; Harrison, Chin, & Ficarrotto, 1992; Pollack, 1998). For example, participants in this study reported men would possibly engage in self-destructive behaviors (e.g., alcohol and drug abuse) as a coping strategy when faced with a physical sexual difficulty. Thus far, available research has not examined endorsement of masculine standards in relation to sexual difficulties in men who do not have a life-threatening illness<sup>11</sup>.

### **3.6.1 Limitations**

Several limitations warrant discussion. First, participants who are interviewed in person may underreport true experiences of sexual difficulties due to concerns about social stigmatisation and lack of privacy in the interviews (Laumann et al., 1999; Lau et al., 2008).

Second, the cultural context of the current study must be noted. Specifically, all participants were Irish citizens, residing in Ireland. It is plausible that some issues which are internationally relevant may not have emerged, as they may not be as relevant within an Irish context. For example, although the use of alkyl nitrites (i.e., poppers) was discussed by some participants, the use of illicit substances (e.g., methamphetamine, cocaine, marijuana, etc.) and their relationship to sexual function was not raised. Across the international literature, substance use has been positively associated with sexual difficulties among both heterosexual and sexual minority samples (e.g., Christensen, Grønbaek, Pedersen, Graugaard, & Frisch 2011; Johnson, Phelps, & Cottler, 2004; Lau et al., 2005; Lau et al., 2008). Although participants in the current study were not specifically asked about illicit substance use, future research would benefit from the inclusion of such inquiries to gain a better understanding of the complexities of sexual difficulties.

Third, all interviews and focus groups were conducted by a young female. Researchers examining men’s health have found that interviewer gender can shape men’s talk during interviews (e.g., Broom, 2004; Broom, Hand, & Tovey, 2008; Oliffe & Mroz, 2005). Men may avoid saying, or may emphasise, certain things depending on the gender of the interviewer (Arendell, 1997; Pini, 2005; Williams & Heikes, 1993). For example, Broom et al. (2008) reported that when men were interviewed by a male, masculine traits were emphasised. Such enactment of cultural

## Chapter 3: Qualitative Exploration

standards of masculinity could serve as a means through which experiences, such as erectile difficulties associated with prostate cancer, could be concealed. In contrast, when men were interviewed by a female, expressions of heightened “professionalism” and self-credentialing were evident. The authors explained that such portrayals were an attempt by participants to match the perceived professional status of the female interviewer (Broom et al., 2008). Although not feasible for the current study, in future, it is recommended that male and female interviewers be used and their resultant transcripts compared to identify similarities and differences.

### **3.7 Conclusion**

Evidently, current classifications of sexual difficulties do not cover the experiences of gay men. In order to address this issue, and examine potential correlates of sexual difficulties for gay men (i.e., anxiety, depression, stress, body image, and masculinity), a measure of sexual difficulties specific to gay men must be developed. Thus, the following chapters will focus on the creation of this measure and detail its dimensionality, validity, and scale score reliability.

## 4. Chapter Four

### Study 3: Psychometric Exploration

#### 4.1 Purpose of Study 3

The purposes of study three were threefold: 1) to develop a measure to assess sexual difficulties in gay men (i.e., the Gay Sexual Difficulties Scale [GSDS]); 2) to assess the measure's dimensionality using current guidelines for best practice in exploratory factor analysis set forth by Costello and Osborne (2005), Fabrigar et al. (1999), and Worthington and Whittaker (2006); and 3) to examine the construct validity of the measure.

#### 4.2 Construct Validity

Validity is defined as the extent to which an instrument measures what it is intended to measure (Carmines & Zeller, 1979). More specifically, construct validity refers to the extent to which a particular measure relates to other measures, and is based on theoretically derived hypotheses regarding the concepts being assessed (Carmines & Zeller, 1979). Construct validity is particularly important when criterion-related validity cannot be established (i.e., when there is no acceptable gold standard measure with which to ascertain the quality of the construct being measured; Cronbach & Meehl, 1955). As is the case for the current measure, no gold standard indicator of sexual difficulties for gay men exists (discussed in Chapter Two). Thus, three types of construct validity will be assessed: convergent validity, discriminant validity, and known-groups validity.

**4.2.1 Convergent Validity.** Convergent validity is the degree to which scores on a measure are correlated with scores on related measures (Furr & Bacharach, 2008). Convergent validity will be investigated by testing hypotheses formulated in accordance with extant research on sexual functioning. Specifically, demographic variables (i.e., age, educational attainment)<sup>12</sup> and social variables (i.e., religion) which have been related to sexual difficulties, will be examined.

**4.2.1.1 Age.** Hirshfield et al. (2010) found that younger MSM were significantly more likely to have experienced specific sexual difficulties (i.e., pain during sex, low sexual desire, premature ejaculation, and not finding sex pleasurable) in comparison to MSM aged 50 and older. Furthermore, participants in Study 2 stated difficulties during anal sex would be more common for younger men. Thus, it was hypothesised that these difficulties would lessen with age (H1). In contrast, several authors have documented that erectile difficulties are more common for older

men (e.g., Bancroft et al., 2005b; Derogatis & Burnett, 2008; Nicolosi et al., 2004; Saigal, Wessells, Pace, Schonlau, & Wilt, 2006; Zamboni & Crawford, 2007).

Laumann et al. (1999), for example, reported statistically significant differences in erectile function between heterosexual men aged 18 to 29 and those aged 50 to 59, with the latter being three times more likely to experience erectile difficulties.

Similarly, in Hirshfield and colleagues' study (2010), participants aged 50 years and older were twice as likely to experience erectile difficulties compared to those under age 30. Given these findings, it was hypothesised that older men would be more likely to report erectile difficulties (H2).

**4.2.1.2 Educational Attainment.** Several authors have documented a positive association between poor education and sexual difficulties (e.g., Bacon et al., 2003; DeLamater & Sill, 2005; Derogatis & Burnett, 2008; Laumann et al., 2004; Mao et al., 2009; Parish, Laumann, Pan, & Hao, 2007). Rosser et al. (1997), for instance, found that college graduates reported less lifetime painful insertive sex than those who had not graduated from college. For current sexual difficulties, graduates reported less painful receptive anal intercourse than non-graduates. Likewise, in a sample of men from Brazil, Italy, Japan, and Malaysia ( $N = 2400$ ; i.e., 600 men from each country), Nicolosi et al. (2003) reported an inverse association between erectile difficulties and educational level. Based on these findings, it was hypothesised that college graduates would report fewer sexual difficulties than non-graduates (H3).

**4.2.1.3 Religion.** Beliefs, perceptions and attitudes towards sex can be influenced by cultural and societal messages about sex (Ahmed & Bhugra, 2007). In particular, some have argued that religious restrictions can play a role in the aetiology and maintenance of sexual difficulties (e.g., Ahmed & Bhugra, 2007; McCabe et al., 2010; Pukall, Meana, & Fernandez, 2010). Although this association has rarely been examined, two studies have provided tentative support for this claim. In a qualitative study, Richardson, Wood, and Goldmeier (2006) reported that men from Islamic backgrounds believed that religion was an influential factor in their experiences of premature ejaculation. Further, Rosser et al. (1997) found that prevalence rates of current sexual difficulties varied across religious denominations: 71% of non-Christians, 54% of Roman Catholics, 50% of Protestants, and 38% of those with no religious affiliation reported a current sexual difficulty. Therefore, in the current study, it was hypothesised that experiences of sexual difficulties would vary across religious denominations, with those of non-Christian affiliations

reporting greater sexual difficulties (H4). To expand on the scant literature relating to religion and sexual difficulties, two additional religious variables were examined: the importance one assigns to religion, and religious behavior (i.e., attendance at religious services). Due to the lack of empirical research on this subject, no formal hypotheses were tested for these indicators.

**4.2.2 Discriminant Validity.** Discriminant validity is the extent to which scores on a measure are uncorrelated with measures of unrelated constructs (Furr & Bacharach, 2008). Discriminant validity will be assessed by examining the association between scores on the measure under development and scores on the International Index of Erectile Function (IIEF; Rosen et al., 1997). Although the IIEF is considered the gold standard measure of sexual function, in Chapter Two several limitations of this scale were discussed. Specifically, the limitations of the IIEF are: 1) the main focus is on erectile function; 2) it does not differentiate between premature and delayed ejaculation; 3) the experience of pain during sex is not assessed; and 4) the wording of particular items may suffer from a heterosexual bias (i.e., it excludes men who assume the receptive role in anal intercourse, as well as those who do not engage in penetrative sex). Thus it was hypothesised that scores on the IIEF would correlate weakly with scores on the GSDS (H5).

**4.2.3 Known-Groups Validity.** Known-groups validity describes the ability of a measure to discriminate across different groups (e.g., clinical and non-clinical samples) who theoretically are expected to score differently on the measured construct (Cronbach & Meehl, 1955). Known-groups validity will be assessed through comparisons of those who evidence lower versus higher levels of psychological well-being.

It is widely accepted that well-being, in terms of anxiety, depression, and stress, is associated with sexual difficulties (e.g., Araujo, Durante, Feldman, Goldstein, & McKinlay, 1998; Beck, 1967; Cassidy, Flanagan, Spellman, & Cohen, 1957; Kennedy, Dickens, Einfeld, & Bagby, 1999; Schreiner-Engel & Schiavi, 1986). In particular, previous research has found that men with sexual difficulties exhibit poorer levels of psychological well-being than do their sexually functional counterparts (e.g., Angst, 1998; Costa, Fagan, Piedmont, Ponticas, & Wise, 1992; Laumann, Das, & Waite, 2008).

In relation to stress, Laumann et al. (1999) reported that individuals who experienced stress-related problems were more likely to experience sexual

difficulties. Similarly, in Laumann and colleagues' study (2004), a positive association was documented between erectile difficulties and stress resulting from financial problems. Further, Mao et al. (2009) found that reported stress was positively associated with sexual difficulties for HIV-negative and HIV-positive men.

For the variable of anxiety, Bancroft et al. (2003) reported that 39% of anxious participants reported a decrease in sexual interest, and 31% reported a decrease in erectile function. Likewise, Bancroft et al. (2005b) found that anxiety levels were higher for participants with erectile difficulties, compared to those without. In a sample of 1550 women and 1455 men (age range = 57-85 years), Laumann et al. (2008) noted that anxiety was associated with an increased lack of sexual interest in men.

Bancroft et al. (2003) observed that, when experiencing depression, 47% of participants reported a decrease in sexual interest, and 37% reported a decrease in erectile function. Correspondingly, Bancroft et al. (2005b) documented that, for both gay and heterosexual men, scores on a measure of depression were higher for those with erectile difficulties and delayed ejaculation. Mao et al. (2009) also found that HIV-negative and HIV-positive men who had several sexual difficulties were more likely to suffer from depression.

Based on the aforementioned findings, it was hypothesised that those reporting greater sexual difficulties also would experience greater levels of anxiety, depression, and stress (H6-8).

### **4.3 Item Generation**

Item generation was grounded in scale development guidelines set forth by DeVellis (2012). Specifically, an extensive review of sexual functioning literature (Study 1) and qualitative investigations (Study 2) were conducted; the results of which were combined to inform item generation.

The qualitative study outlined in Chapter Three was particularly helpful as several novel constructs, not previously documented in the literature, emerged (e.g., difficulties associated with a tight foreskin). The language used by participants (e.g., words such as “arse,” “cum,” and “jerk off”) also was noted to ensure that items reflected how the constructs were phrased.

The literature review influenced item generation in that the aim was to improve upon existing measures. First, the items employed by these scales were

found to be restrictive (e.g., there was a consistent focus on penetrative sex). To address this limitation, items were worded to take gay men's sexual behaviors into account (e.g., rimming). Second, items were designed to be suitable for respondents possessing varying levels of sexual experience. To illustrate, a "not applicable" option was included thereby enabling men to respond to all items, even those pertaining to sexual activities they had not experienced. Third, previous research has used a variety of time periods to assess sexual difficulties (e.g., one week [McGahuey et al., 2000], 30 days [O'Leary et al., 1995], three months [Lau et al., 2008]). For the current measure, six months was selected, as this time frame represents the standard period of assessment for sexual dysfunction according to the DSM-IV-TR (APA, 2000) and, more recently, the DSM-5 (APA, 2013). Finally, items were multifaceted to assess sexual difficulties in a variety of contexts, offering theoretical support for situational and generalised sexual function – a distinction that has been ignored in extant measures. For example, questions related to erectile functioning concerned a variety of contexts (e.g., sexual activity in general, masturbation, oral sex, and anal sex).

To create a high quality measure, the item pool was exhaustive and over-inclusive, as per guidelines set forth by DeVellis (2012). To ensure clarity, colloquial terms as well formal phrases were provided when deemed necessary (illustrative item: "When you penetrated a guy anally [i.e., topped him/fucked him], were you able to ejaculate [i.e., cum]?"). All items were worded to be compatible with Likert-type response formats, due to their ease of administration and analysis (DeVellis, 2012).

A panel of experts was recruited to assess the measure. This panel consisted of content experts (i.e., individuals who have worked or published in the fields of psychometrics [ $n = 4$ ] and LGBT research [ $n = 2$ ]) and "lay experts" (i.e., potential research participants [ $n = 3$ ]; McGartland Rubio, Berg-Weger, Tebb, Lee, & Rauch, 2003). The panel was asked to review the measure in accordance with the following criteria: 1) representativeness (i.e., how well each item characterises a given sexual difficulty); 2) clarity (i.e., how clearly each item is worded); and 3) comprehensiveness (i.e., the degree to which the items sufficiently sampled the content domain). The experts' responses were examined and the measure was revised to accommodate their feedback. For example, one content expert suggested the inclusion of items relating to testicular pain, and another content expert

suggested the inclusion items relating to seminal fluid concerns. Consequently, items were developed to address these issues.

Two item pools were generated; the first measuring physical sexual difficulties, the second measuring psychological sexual difficulties. Thus, the combined item pool for the Gay Sexual Difficulties Scale (GSDS) consisted of 143 questions concerning several domains of sexual difficulties: embarrassment about one's physique (12 items); embarrassment about one's penis (12 items); seminal fluid concerns (11 items); foreskin-related difficulties (11 items); penis size difficulties (nine items); body odour (eight items); erectile difficulties (eight items); anal hygiene (six items); appearance of one's skin (six items); body hair (six items); fear of sexually transmitted infections (six items); pain (six items); sexual desire (six items); sexual enjoyment (six items); premature ejaculation (five items); delayed ejaculation (five items); absence of ejaculation (five items); anus capabilities (four items); self-blame for sexual dissatisfaction (i.e., sexual attribution of responsibility; four items); testicular embarrassment (four items); and perceived sexual prowess (three items). Items were worded so that higher scores indicate greater sexual difficulties (i.e., 0 = not applicable, 1 = never, 2 = once or twice, 3 = several times, 4 = most of the time, and 5 = all of the time). The factor structure, reliability, and validity of the GSDS were investigated.

### 4.4 Method

#### 4.4.1 Participants

The initial sample consisted of 1353 men who ranged in age from 18 to 79 years ( $M = 34.08$ ,  $SD = 12$ ). Men who self-identified as “more gay than heterosexual” ( $n = 163$ ), “bisexual” ( $n = 46$ ), “more heterosexual than gay” ( $n = 17$ ) and “other” ( $n = 6$ ) were excluded from all analyses. Therefore, the final sample was comprised of 1122 “exclusively gay” men who ranged in age from 18 to 79 ( $M = 34.55$ ,  $SD = 11.87$ ). Approximately 53% of participants were from North America ( $n = 591$ ), 34% were from Europe ( $n = 382$ ), 7% were from Oceania ( $n = 74$ ), 3% were from Africa ( $n = 37$ ), 2% were from Asia ( $n = 27$ ), and 1% were from South America ( $n = 11$ ). Demographic characteristics of the sample are presented in Table 4.1.

#### 4.4.2 Procedure

Ethical approval was obtained from the research ethics committee affiliated with the author's university. Using *Surveygizmo*<sup>®</sup>, a questionnaire pack was created

which consisted of an information sheet, informed consent and relevant measures. Two versions of the questionnaire pack were created; both contained identical information sheets, consent forms, demographic questions, and sexual difficulties items. However, the first version included the validation measures for the current study, whereas the second version included the validation measures for the following study (Study 4). Participants were randomly assigned (using month of birth) to each version of the survey. Specifically, those born in January, March, May, July, September, and November participated in the current study (i.e., Study 3); those born in February, April, June, August, October, and December were directed to the survey for Study 4. This process ensured that there was no overlap between participants in the current study and those in the following study.

The participant information sheet, presented on the first page of the survey, clearly stated that only men aged 18 years and older were eligible to participate. The purpose of the study and ethical requirements for research with human participants were described (i.e., participation was anonymous and voluntary). The consent sheet appeared under the information sheet; demographic questions, sexual difficulties items and the validation measures were presented on the remaining pages. Secure Sockets Layer encryption was used to ensure participant confidentiality.

#### **4.4.3 Data Collection**

Participants were recruited through a variety of means. In Ireland, a national campaign was launched seeking participation from all gay men aged 18 years and over. Advertisements were placed in local and national newspapers, and the research was discussed on local and national radio stations. Posters detailing the study were displayed in gay bars and nightclubs throughout Ireland.

Internationally, LGBT organisations and groups (e.g., Pride event organisers) were contacted and asked to forward “an invitation e-mail” to their members. Invitations to participate in a study on sexual difficulties were posted online in several locations (e.g., blogs, websites, and discussion forums). The administrators of these websites, blogs and forums were also asked to forward information about the study to personal contacts. As well, chain-referral sampling was used whereby acquaintances of the author were asked to inform other men about the study. Additionally, a *Facebook* page (“*Gay Men’s Sex Survey*”) was created, which described the research and provided links to the survey. Other LGBT-related

*Facebook* pages (e.g., gay choirs) were contacted and asked to post a link to the survey on their page.

Participants could enter a competition to win a gift voucher worth €175 (\$200), if desired. Contact details were submitted separately to survey data to ensure participant anonymity.

#### **4.4.4 Measures**

In addition to demographic questions (i.e., age, ethnicity, country of residence, sexual orientation, educational attainment, occupational status, relationship status, and religious denomination), as well as sexual difficulties items, participants completed the following measures:

**Religiosity.** Two single-item indicators of religiosity were employed: religious importance and religious behavior. Religious importance was assessed using the item: “In your daily life, how important is religion to you?” Responses are coded on a five-point Likert scale (1 = very unimportant; 5 = very important). Religious behavior was measured using the item “How often do you attend religious services?” Responses are coded on a four-point Likert scale (1 = never; 4 = regularly). For both items, higher scores denote greater levels of religiosity. Research suggests that single-item indicators of religious importance and religious behavior are psychometrically sound (Gorsuch & McFarland, 1972; Sheeran, Abrams, Abraham, & Spears, 1993).

**International Index of Erectile Function (IIEF;** Rosen et al., 1997). The IIEF is a self-report measure of erectile functioning and capacity over the past four weeks (e.g., “When you had erections with sexual stimulation, how often were your erections hard enough for penetration”). Typically, the IIEF has 15 items; however, for the current study, one item was deemed to be doubled-barrelled and, subsequently, was split into two questions. This item was: “Over the last month, how do you rate your confidence that you can get and keep your erection” which became “Over the last month, how do you rate your confidence that you can get an erection” and “Over the last month, how do you rate your confidence that you can keep your erection.” Five domains of sexual functioning are assessed: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Responses are coded on five and six-point Likert scales (e.g., 1 = very low, 5 = very high; 0 = no sexual activity, 5 = almost always or always). For the current study, an additional response option (i.e., “more than 20 times”) was provided for question six

(Over the last month, how many times have you attempted sexual intercourse? Response options: 0 = no attempts, 5 = 11-20 times, 6 = more than 20 times). In addition, to ensure the measure was suitable for gay men, the original response options of “no sexual activity” and “did not attempt intercourse” were reworded to “did not engage in penetration”. A “not applicable” option was also added to questions which assumed sexual activity had occurred (e.g., Item 14: “Over the last month, how satisfied have you been with your sexual relationship with your partner?” Response options: 0 = not applicable, 1 = very dissatisfied, 5 = very satisfied). Higher scores denote better sexual functioning (possible range is from 4 to 81). Typically, domain scores are calculated by summing the scores for individual items in each domain. However, as per recommendations by Yule, Davison, and Brotto (2011), and Meyer-Bahlburg and Dolezal (2007), to prevent overestimates of sexual difficulties, the “not applicable” option was coded as missing values for validity analyses. Hence, rather than using total domain scores, a mean score for each domain was calculated for all participants, based on the number of items individuals had answered (i.e., items that *were* applicable to them). Although the IIEF is limited in that it focuses on penetration and provides superficial assessment of sexual functioning domains outside the parameters of erectile function, it was included in the current study as it is considered the only “gold standard” measure for erectile functioning (Daker-White, 2002).

With respect to the scale’s psychometric properties, Rosen et al. (1997) reported findings in support of the scale’s reliability (across three samples: subscale  $\alpha$ s = .73-.99; total scale  $\alpha$ s = .91-.96; and test-retest reliabilities = .64-.84) and validity (e.g., evidence for concurrent validity was demonstrated through a comparison of patient IIEF scores with independent, blinded clinician ratings of sexual function). In the current investigation, alpha coefficients were .87 for the erectile function domain (95% CI = .86-.88), .91 for the intercourse satisfaction domain (95% CI = .90-.91), and .91 for the total scale score (95% CI = .90-.92). For the two-item subscales (i.e., orgasmic function domain, sexual desire domain, and overall satisfaction domain), reliability was assessed through item correlations:  $r_{(1120)} = .71, p < .001$ ;  $r_{(1120)} = .72, p < .001$ ; and  $r_{(1120)} = .69, p < .001$ , respectively.

**Hospital and Anxiety Depression Scale (HADS; Zigmond & Snaith, 1983).** The HADS is a 14-item scale that provides a brief state measure of anxiety (HADS-A: seven items; e.g., “I feel tense or wound up”) and depression (HADS-D: seven

items; e.g., “I still enjoy the things I used to enjoy”). Responses are coded on a four-point Likert scale, with different response items for each question (e.g., 0 = not at all, 3 = most of the time; 0 = definitely as much, 3 = hardly at all). Higher scores denote greater anxiety or depression (possible range for each seven-item subscale is 0 to 21).

Adequate scale score reliability and validity have been demonstrated (Bjelland, Dahl, Haug, & Neckelmann, 2002; Moorey et al., 1991; Zigmond & Snaith, 1983). For example, Bjelland et al. (2002) conducted a review of studies employing the HADS. Across all studies, Cronbach’s alpha values were greater than .60, as per recommendations by Nunnally and Bernstein (1994), indicating good scale score reliability. Concurrent validity also was demonstrated as correlations between scores on the HADS and other anxiety and depression measures (e.g., the Beck Depression Inventory [Beck, Ward, Mendelson, Mock, & Erbaugh, 1961], and the State-Trait Anxiety Inventory [Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983]) ranged from .60 to .80. In the current study, Cronbach’s alpha was .84 (95% CI = .82-.85) for the HADS-A, and .80 (95% CI = .78-.81) for the HADS-D.

**The Perceived Stress Scale - Four (PSS-4; Cohen & Williamson, 1988).** The PSS-4 is a four-item measure of the degree to which situations in one’s life are appraised as stressful (e.g., “In the last month, how often have you felt that you were unable to control the important things in your life”). Responses are coded on a five-point Likert scale (0 = never; 4 = very often) with higher scores denoting more perceived stress (possible range is 0 to 16).

Research suggests the scale is psychometrically sound (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). For example, in relation to reliability, Cronbach’s alpha values of .60 (Cohen & Williamson, 1988), and .68 and .72 (Herrero & Meneses, 2006) have been reported. Evidence for the scale’s validity has been provided through correlations with various measures of stress, such as single-item indicants (e.g., “Are there things going on in your life now that you find very upsetting or bothersome?”) and a Life Events Scale (i.e., a measure of potentially significant negative and positive changes in a person’s life) (Cohen & Williamson, 1988). In the current investigation, Cronbach’s alpha was .81 (95% CI = .79-.83).

#### 4.4.5 Data Analytic Strategy

**Missing Data.** To determine whether participants who had missing data were different from those who responded in full, Little's Missing Completely at Random (MCAR) test (Little, 1988) was used. A non-statistically significant ( $p > .05$ ) result is desired as this signifies the data are MCAR (Tabachnick & Fidell, 2007). In the current study, Little's test was non-significant for all measures. Although there are various methods for dealing with MCAR data, Expectation Maximization (EM) methods were deemed an appropriate choice for the present research. EM is considered an excellent procedure for handling missing data (Allison, 2001; Graham, 2009), and is acceptable when data are MCAR (Scheffer, 2002) and the percentage of missing data is minimal (i.e., less than 5%: Graham, 2009; Scheffer, 2002).

**Exploratory Factor Analysis.** There are two types of factor analysis<sup>13</sup> used for scale development: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA allows items to be related to any of the underlying factors; hence, it is most advantageous when the underlying relationships between items and factors are unknown. CFA, in contrast, requires a theoretical or empirical basis for an assumed factor structure (Fabrigar et al., 1999). Accordingly, the item pool was subjected to an EFA.

The factorability of the data was examined using Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. If Bartlett's test is statistically significant, the hypothesis that the variables being factor analysed are unrelated to one another can be rejected (i.e., the correlation matrix for the data is an identity matrix; Morrison & Morrison, 2006). For the KMO, values above .60 are necessary for EFA (Tabachnick & Fidell, 2007). As Bartlett's test was statistically significant ( $p < .001$ ) and the KMO statistic was .87, EFA was suitable for the data.

The dimensionality was examined using principal axis factoring (PAF) with oblique rotation (direct oblimin, delta set at zero). PAF is a method of extraction which fits common factor models to data without distributional assumptions (Fabrigar et al., 1999). Considering scores on the GSDS were non-normally distributed (i.e., in the current study, participants reported infrequent sexual difficulties), PAF was deemed to be appropriate. Oblique rotation was employed as some degree of interrelatedness among factors was expected.

Decisions regarding the number of factors to retain were based on a parallel analysis (O'Connor, 2000), in conjunction with an examination of the screeplot.

Parallel analysis generates eigenvalues from random data sets that match (or are parallel to) the actual data set in relation to number of participants and variables. Eigenvalues from the random data set are then compared to eigenvalues of the actual data set. The number of factors to retain is indicated when a given eigenvalue for the random data becomes larger than the corresponding eigenvalue for the real data (Thompson, 2004). A screeplot is a graph of eigenvalues; the number of factors to retain is suggested by counting the number of data points above where the curve flattens out, excluding the data point where the break occurs (Costello & Osborne, 2005).

**Item reduction.** Each factor was assessed for the presence of redundant items. High correlations between variables may indicate item redundancy (Furr & Bacharach, 2008); thus, if two items correlated with each other in excess of .90 (Field, 2009), the item with the lower factor loading was deleted. Items also were removed if inter-item correlations were weak (i.e.,  $r_s$  across other items were less than .30; Field, 2009). In addition, corrected item-total correlations for each factor were inspected; items with values less than .30 were removed (Field, 2009). For the purpose of retaining items, the minimal acceptable factor loading was .50, with no cross-loadings great than .32 (Worthington & Whittaker, 2006).

**Normality.** Distributions of scores on the validation measures (and the scale undergoing psychometric testing, the GSDS) were inspected for normality. Almost all of the variables evidenced an acceptable degree of skew ( $< 0.80$ ) and kurtosis ( $< 3$ ; Tabachnick & Fidell, 2007)<sup>14</sup>. The exceptions to this were the erectile difficulties subscale, the body embarrassment subscale, the seminal fluid concerns subscale, the foreskin difficulties subscale, and the depression subscale of the HADS, all of which were positively skewed. Logarithmic transformations then were conducted on these variables. Skewness was reduced to acceptable levels for all (see Table 4.2). Means and standard deviations reported are from the untransformed data.

### 4.5 Results

Applying the aforementioned item removal criteria, 47 items were retained. Using syntax provided by O'Connor (2000), parallel analysis suggested that a six-factor solution should be retained (i.e., the first six eigenvalues for the real data [9.03, 4.94, 4.10, 3.93, 3.23, 3.09] exceed the first six eigenvalues for the random data [5.03, 3.97, 3.07, 3.06, 3.06, 2.84]. Thus the analysis was repeated forcing a six-factor solution, which accounted for 60.18% of the total variance (see Table 4.3 for

eigenvalues and factor loadings). Inspection of the items' loadings on each factor suggested they measure: Receptive Anal Difficulties (RAD; 13 items); Erectile Difficulties (ED; 8 items); Seminal Fluid Concerns (SFC; 7 items); Insertive Anal Difficulties (IAD; 10 items); Foreskin Difficulties (FD; 4 items); and Body Embarrassment (BE; 5 items). The average factor loadings were .66 (RAD), .77 (ED), .73 (SFC), .68 (IAD), .87 (FD), and .79 (BE), respectively, which reflects a high degree of correlation between test items and their corresponding factors.

Results attested to the reliability of the GSDS total scale score ( $\alpha = .90$ ; 95% CI = .89-.91). Alpha coefficients and confidence intervals for all subscales (and validation measures), as well as means, standard deviations, and score ranges are presented in Table 4.4.

The average inter-item correlation was .45 for the RAD (range = .26<sup>15</sup>-.74); .59 for the ED (range = .41-.87); .53 for the SFC (range = .37-.69); .46 for the IAD (range = .28<sup>15</sup>-.70); .75 for the FD (range = .66-.86); and .62 for the BE (range = .45-.76). Item variances ranged from 0.22 to 2.79 ( $M = 1.18$ ) for the RAD; 0.39 to 1.41 ( $M = 0.84$ ) for the ED; 0.23 to 0.48 ( $M = 0.34$ ) for the SFC; 0.30 to 2.32 ( $M = 1.06$ ) for the IAD; 0.44 to 0.82 ( $M = 0.59$ ) for the FD; and 0.78 to 1.50 ( $M = 1.27$ ) for the BE.

The six subscales were moderately intercorrelated (see Table 4.5) suggesting that they measure interrelated, yet distinct, constructs (i.e., an individual may experience erectile difficulties but not experience foreskin difficulties). A summary of correlations for all measures used in the current study are provided in Table 4.6.

#### **4.5.1 Convergent Validity**

To examine the convergent validity of the GSDS, scores on the subscales, and overall scale score, were assessed with regards to their relationship to age, educational attainment and religion. To avoid inflation of sexual functioning scores, the "not applicable" option was coded as missing values for all validity analyses (Meyer-Bahlburg & Dolezal, 2007; Yule et al., 2011). Thus, rather than calculating a total scale score, for each respondent, a mean score was calculated, based on the number of items the participant had answered (i.e., items that *were* applicable to them). This resulted in different sample sizes for each indicant of sexual difficulties:  $n = 1016$  for receptive anal difficulties;  $n = 980$  for insertive anal difficulties;  $n = 1119$  for erectile difficulties;  $n = 1080$  for body embarrassment;  $n = 1115$  for seminal

fluid concerns;  $n = 600$  for foreskin difficulties; and  $N = 1122$  for overall sexual difficulties. Each test is detailed next.

**4.5.1.1 Age and Indicators of Sexual Difficulties.** To investigate the association between age and sexual difficulties, participants were classified into four groups: 18 to 29 years (group one,  $n = 469$ ); 30 to 39 years; (group two,  $n = 306$ ); 40 to 49 years (group three,  $n = 210$ ); and 50 years and older (group four,  $n = 137$ ). These groupings were selected in accordance with those used in previous sexual functioning research to represent distinct stages in sexual function (e.g., Hirshfield et al., 2010; Lau et al., 2005; Laumann et al., 1999; Papaharitou et al., 2006; Saigal et al., 2006). Due to the number of analyses being conducted, Bonferroni correction was employed to control for Type 1 error (i.e., a  $p$  value of .0125 was used to identify statistically significant differences). For post hoc analyses, a  $p$  value of .002 was used (.0125 divided by six, i.e., the number of pairwise comparisons when there are four groups). A summary of Levene's tests and post hoc tests used for each ANOVA are reported in Table 4.7; when Levene's test was statistically significant (suggesting that the assumption of homogeneity of variance was violated), the robust test equality of means (Welch's test)  $F$  statistic is reported. Means, standard deviations, and ANOVA results for each age group in relation to scores on all subscales and the total scale (GSDS) are presented in Table 4.8.

**Age and Receptive Anal Difficulties.** An ANOVA revealed that the age groupings differed significantly in their scores on the receptive anal difficulties subscale:  $F_{(3, 1012)} = 24.25, p < .001, \eta^2 = .07$ . The youngest men (group 1) showed the highest average scores on receptive anal difficulties. Post hoc tests revealed a statistically significant difference between the youngest group and each of the other three groups (i.e.,  $ps < .001$ ), with the younger men reporting more difficulties. No other statistically significant differences were found between groups two, three, and four.

**Age and Insertive Anal Difficulties.** A statistically significant difference in scores on the insertive anal difficulties subscale was observed among the age groupings:  $F_{(3, 358.67)} = 6.44, p < .001, \eta^2 = .02$ . Post hoc analyses indicated that average subscale scores were significantly lower (i.e.,  $ps < .002$ ) for the oldest age group in comparison to groups one and two. Thus, as predicted, difficulties associated with insertive anal sex were greater for younger men. No significant

differences emerged between groups one, two and three, or between groups three and four.

**Age and Erectile Difficulties.** An ANOVA revealed that the age groupings differed significantly in their scores on the erectile difficulties subscale:  $F_{(3, 413.62)} = 8.23, p < .001, \eta^2 = .03$ . Post hoc analyses indicated that the average erectile difficulties scores were significantly higher (i.e.,  $ps < .002$ ) for the oldest age group in comparison to group one and group two. No other statistically significant differences emerged between age groups suggesting that erectile difficulties were greater for older men.

**Age and Body Embarrassment.** A statistically significant difference in scores on the body embarrassment subscale was observed among the age groupings:  $F_{(3, 429.74)} = 5.52, p = .001, \eta^2 = .02$ . Post hoc tests revealed that the oldest men scored significantly lower (i.e.,  $ps < .002$ ) than groups one and two. No other statistically significant differences were found.

**Age and Seminal Fluid Concerns.** A statistically significant difference was found in seminal fluid concerns among the age groupings:  $F_{(3, 430.86)} = 7.50, p < .001, \eta^2 = .02$ . Post hoc analyses demonstrated that the youngest men scored significantly higher than the oldest age group (i.e.,  $p < .002$ ). No other statistically significant differences were found.

**Age and Foreskin Difficulties.** An ANOVA revealed that the age groupings differed significantly in their scores on the foreskin difficulties subscale:  $F_{(3, 204.52)} = 6.85, p < .001, \eta^2 = .03$ . Post hoc analyses indicated that mean foreskin difficulties scores were significantly higher (i.e.,  $p < .002$ ) for the youngest men in comparison to the oldest men. No other statistically significant differences emerged.

**Age and Overall Sexual Difficulties.** An ANOVA revealed that the age groupings differed in their overall sexual difficulties:  $F_{(3, 430.03)} = 12.99, p < .001, \eta^2 = .03$ . Post hoc analyses indicated that the average sexual difficulties score was significantly higher for the youngest age group compared to the oldest age group (i.e.,  $p < .002$ ); thus, the youngest age group evidenced significantly greater levels of sexual difficulties. No other significant differences were found.

**4.5.1.2 Educational Attainment and Indicators of Sexual Difficulties.** To assess the possible association between level of educational attainment and sexual difficulties, participants were placed into one of two groups: college graduates ( $n = 620$ ) and non-graduates ( $n = 494$ ). Eight participants were excluded from these

analyses as they selected “decline response” to this question. Independent samples  $t$ -tests were conducted (with Levene’s corrections for unequal variances). Statistically significant differences between these two groups were noted for receptive anal difficulties [ $t_{(1009)} = 3.80, p < .001, d = 0.24$ ], seminal fluid concerns [ $t_{(945.16)} = 2.51, p = .012, d = 0.16$ ], and overall sexual difficulties [ $t_{(1112)} = 2.38, p = .018, d = 0.14$ ], College graduates reported fewer sexual difficulties than non-graduates. Means and standard deviations for each group on all of the sexual difficulties indicants are provided in Table 4.9.

**4.5.1.3 Religion and Indicants of Sexual Difficulties.** To assess the association between religious denomination and sexual difficulties, participants were classified into four groups: Christian (i.e., Anglican, Baptist, Catholic, LDS, Lutheran, Methodist, Presbyterian, United;  $n = 299$ ); other religious denominations (i.e., Buddhism, Islam, Judaism, other;  $n = 129$ ); atheists and agnostics ( $n = 374$ ); and those who identified as spiritual, not religious ( $n = 277$ ). These categories were selected due to unequal sample sizes across denominations; approximately 27% of the sample were Christian, whereas percentages of those reporting non-Christian denominations were few (i.e., 2% Buddhist; 1% Jewish; 1% Muslim; and 8% other) and, thus, were grouped together. Forty-three participants were excluded from these analyses as they selected “decline response” to this question. Using Bonferroni correction, a  $p$  value of .0125 was employed to control for Type 1 error across all analyses; for the post hoc tests, a  $p$  value of .002 was used (.0125 divided by six, which represents the number of pairwise comparisons when there are four groups). Means, standard deviations, and ANOVA results for each group on all of the sexual difficulties indicants are provided in Table 4.10. The only significant association between religious denomination and sexual difficulties was in relation to body embarrassment [ $F_{(3, 426.04)} = 4.36, p = .005, \eta^2 = .01$ ]; however, post hoc analyses were not statistically significant (i.e.,  $ps > .002$ ).

In relation to religious behavior, the only significant correlation found was for overall sexual difficulties [ $r_{(1120)} = -.07, p = .027$ ], however, this association was weak (see Table 4.6 for a summary of all correlations). Thus, religious behavior was not significantly associated with sexual difficulties.

Regarding the importance one assigns to religion, those who consider religion to be “important” or “very important” ( $n = 203$ ) were compared to a random sample of those who consider religion to be “unimportant” or “very unimportant” ( $n$

= 203). Thirty-three participants were excluded from these analyses as they selected “decline response” to this question, as were those who considered religion “neither important nor unimportant”. Independent samples *t*-tests revealed statistically significant differences between these two groups for body embarrassment [ $t_{(378.17)} = -2.30, p = .022, d = 0.24$ ], and seminal fluid concerns [ $t_{(362.86)} = -2.40, p = .017, d = 0.25$ ]. Those who consider religion to be “important/very important” reported greater difficulties on these indicants. Means, standard deviations, and *t*-test results for each group on all of the sexual difficulties indicants are provided in Table 4.11.

#### 4.5.2 Discriminant Validity

To assess the discriminant validity of the GSDS, scores on the subscales were correlated with scores on the domains of the IIEF. As predicted, the majority of correlations were either non-significant or statistically significant but weak (for a summary of all correlations see Table 4.6). However, three correlations of practical significance (i.e., 5% of variance accounted for) were found. Insertive anal difficulties were negatively correlated with the erectile function domain [ $r_{(978)} = -.42, p < .001$ ], and the total sexual function score [ $r_{(978)} = -.35, p < .001$ ]. Erectile difficulties were negatively correlated with the orgasmic function domain [ $r_{(1117)} = -.29, p < .001$ ]. Thus, difficulties with insertive anal sex were associated with poorer erectile function and poorer overall sexual function, and erectile difficulties were associated with poorer orgasmic function. Predominantly, however, scores on the GSDS subscales were not related to IIEF scores.

#### 4.5.3 Known-Groups Validity

To examine the known-groups validity of the GSDS, a series of *t*-tests were conducted which assessed the relationships between indicants of sexual difficulties and three indicants of well-being (i.e., anxiety, depression, and stress).

**4.5.3.1 Anxiety and Sexual Difficulties.** Scores greater than eight have been identified as the cut-off for “possible cases” of anxiety disorder (Bjelland et al., 2002; Zigmond & Snaith, 1983); thus, participants who scored in the healthy range (i.e., a score from 0 to 7) were compared to those classified as possible cases (i.e., a score from 8 to 21). Levels of anxiety were significantly associated with scores for receptive anal difficulties [ $t_{(1014)} = -5.55, p < .001, d = 0.35$ ], insertive anal difficulties [ $t_{(962.46)} = -2.18, p = .030, d = 0.14$ ], body embarrassment [ $t_{(1037.70)} = -5.90, p < .001, d = 0.37$ ], seminal fluid concerns [ $t_{(1109.69)} = -2.43, p = .015, d = 0.15$ ], and overall sexual difficulties [ $t_{(1096.51)} = -5.00, p < .001, d = 0.30$ ] with

anxious individuals obtaining higher subscale scores denotative of greater levels of difficulties. Means, standard deviations, and *t*-test results are presented in Table 4.12.

**4.5.3.2 Depression and Sexual Difficulties.** Due to observed floor effects for depression scores (i.e., 81% of participants [ $n = 909$ ] scored in the normal range of 0 to 7), a random sample of healthy participants ( $n = 213$ ) were compared to those who scored above eight, the cut off for “potential cases” of clinical depression ( $n = 213$ ; Bjelland et al., 2002; Zigmond & Snaith, 1983). A significant association was found between levels of depression and scores for receptive anal difficulties [ $t_{(330.51)} = -4.75, p < .001, d = 0.52$ ], insertive anal difficulties [ $t_{(340.06)} = -2.98, p = .003, d = 0.32$ ], erectile difficulties [ $t_{(401.27)} = -3.38, p = .001, d = 0.34$ ], body embarrassment [ $t_{(341.67)} = -5.84, p < .001, d = 0.63$ ], seminal fluid concerns [ $t_{(308.52)} = -2.71, p = .007, d = 0.31$ ], and overall sexual difficulties [ $t_{(359.23)} = -4.89, p < .001, d = 0.52$ ] with depressed individuals evidencing greater levels of sexual difficulties on these subscales. Means, standard deviations, and *t*-test results are presented in Table 4.13.

**4.5.3.3 Stress and Sexual Difficulties.** Although the PPS-4 is not a clinical diagnostic tool, participants who scored above the midpoint (i.e., a score of 9 to 16) were labelled as stressed and compared to a random sample of those scoring at the midpoint and below (i.e., a score of 0 to 8) who were labelled as not stressed. This cut off value was selected in accordance with previous research using this measure (Amr, El Gilany, & El-Hawary, 2008; Shah, Hasan, Malik, & Sreeramareddy, 2010). A significant association was found between stress and receptive anal difficulties [ $t_{(534)} = -5.63, p < .001, d = 0.49$ ], insertive anal difficulties [ $t_{(505)} = -2.23, p = .026, d = 0.20$ ], body embarrassment [ $t_{(510.08)} = -6.33, p < .001, d = 0.56$ ], and overall sexual difficulties [ $t_{(563.50)} = -4.96, p < .001, d = 0.42$ ], with stressed individuals obtaining higher scores on these indicators of sexual difficulties. Means, standard deviations, and *t*-test results are presented in Table 4.14.

## 4.6 Discussion

This study aimed to develop a measure assessing sexual difficulties in gay men and examine its psychometric properties. EFA was used to examine the GSDS’s dimensionality, and item retention was guided by factor loadings, cross-loadings, inter-item correlations and reliability analyses. The results provide strands of evidence in support of the psychometric soundness of the GSDS in terms of dimensionality, reliability and validity.

A six-factor solution was deemed appropriate; the six factors were Receptive Anal Difficulties, Erectile Difficulties, Seminal Fluid Concerns, Insertive Anal Difficulties, Foreskin Difficulties, and Body Embarrassment. The average factor loadings reflected a high degree of correlation between test items and their corresponding factors.

Cronbach's alpha coefficients suggested scores on the GSDS and subscales were internally consistent. Although the upper bound estimates for Cronbach's alpha reveal possible item redundancy, corresponding mean inter-item correlations suggested adequate variability of item content (Kline, 1986).

Construct validity was established through examinations of convergent, discriminant, and known-groups validity. Each will be discussed.

Age was significantly associated with all domains of sexual difficulties. Younger gay men had significantly more receptive and insertive anal sex difficulties; seminal fluid concerns; foreskin-related difficulties; concerns over body embarrassment; and overall sexual difficulties. These findings support the results of Study 2 whereby participants reported difficulties during anal sex would be more common for younger men. The age differences identified in the current investigation also are congruent with previous research by Davison and McCabe (2005). Specifically, these researchers found that older men (95.78% heterosexual) reported a lower level of concern about others evaluating their bodies than did younger participants. The current study similarly found that older men reported experiencing greater erectile difficulties. This finding is in line with previous research on age and sexual function (e.g., Laumann et al., 1999) and can be explained by the natural processes associated with aging (Laumann et al., 2008; Laumann et al., 2007; Nicolosi et al., 2003).

Educational attainment was significantly associated with receptive anal difficulties, concerns regarding seminal fluid, and overall sexual difficulties. Non-graduates experienced greater sexual difficulties on these domains, which is in line with previous research (e.g., Laumann et al., 1999; Nicolosi et al., 2003; Rosser et al., 1997). Greater educational attainment is associated with higher socioeconomic status and greater overall well-being (physically and emotionally; Laumann et al., 1999). Given the association between psychological well-being and sexual difficulties, it may be that participants with greater educational attainment were physically and psychologically healthier, and thus healthier in relation to their sexual

function. These findings also may have stemmed from the influence of some other unmeasured variable. For example, Lau et al. (2005) reported that education level predicted sexual knowledge, which in turn was a predictor of sexual difficulties and sexual satisfaction. Thus, it is plausible that the association between educational attainment and sexual difficulties is moderated by sex-related knowledge.

The only significant finding in relation to religiosity was that those who considered religion to be “important/very important” experienced marginally greater body embarrassment and concerns regarding their seminal fluid in comparison to those who considered religion to be “unimportant/very important.” Religious denomination and religious behavior were not associated with sexual difficulties. The absence of associations for religiosity and sexual difficulties may be attributable to the domains of religiosity assessed. According to Sheeran et al. (1993), religiosity has five dimensions: religious upbringing, religious self-schema, salience of religious identity, religious denomination, and religious behavior. It is possible that other dimensions of religiosity, such as religious upbringing, may be more salient in relation to sexual difficulties.

Discriminant validity was partially supported. Moderate negative correlations were found between the intercourse satisfaction domain of the IIEF and difficulties with insertive anal sex, and between the IIEF orgasmic function domain and erectile difficulties. Additionally, insertive anal difficulties were moderately associated with the erectile function domain of the IIEF, which may be due to the focus on penetrative sex evident in these measures. Interestingly, mean scores on the intercourse satisfaction domain and overall satisfaction domain of the IIEF were low ( $M = 8.23, SD = 5.41$ ;  $M = 5.78, SD = 3.03$ , respectively), which may be a function of the items’ focus on penetration. Primarily, subscales and overall sexual difficulties were not associated with scores on the IIEF. This reinforces the argument made in Chapter Two; although the IIEF is considered the “gold standard” measure of erectile function, it does not adequately address the needs of gay men.

As postulated, well-being was significantly associated with sexual difficulties. In particular, individuals who were highly anxious experienced greater difficulties with receptive anal sex, insertive anal sex, greater concerns regarding others evaluating their body, greater concerns regarding the characteristics of their seminal fluid, and poorer overall sexual function in comparison to their healthy counterparts. Male participants that evidenced higher levels of depression also

reported greater sexual difficulties on the domains of receptive anal sex, insertive anal sex, erectile function, body evaluation concerns, seminal fluid concerns, and poorer overall sexual functioning . Furthermore, individuals classified as “stressed” experienced greater difficulties with receptive anal sex, insertive anal sex, heightened body embarrassment concerns, and greater overall sexual difficulties. These findings provide further support for the construct validity of the GSDS.

### **4.7 Conclusion**

While the initial psychometric assessment is promising, further investigation of the GSDS’s dimensionality, reliability, and validity are required. Psychometric testing is an incremental and ongoing process. Confirmatory factor analysis would consolidate understanding of the fit of the GSDS’s factor structure. Chapter Five will address this issue.



## **5. Chapter Five**

### **Study 4: Additional Psychometric Assessment**

#### **5.1 Purpose of Study 4**

The purposes of the current study were threefold: 1) to further assess the GSDS's psychometric properties using confirmatory factor analysis; 2) to examine sexual difficulties in subsamples of sexual minority men; and 3) to provide further evidence for the construct validity of the GSDS.

#### **5.2 Confirmatory Factor Analysis**

Confirmatory factor analysis (CFA) is a powerful multivariate analytic tool that belongs to the family of structural equation modeling SEM techniques. CFA tests theoretical hypotheses by evaluating the fit of specified models to data and therefore plays a crucial role in scale development (Browne, 2006). As CFA is the primary means of assessing the nature of associations between latent constructs, it is recommended when knowledge of the underlying latent variable structure is available based on theory and/or empirical research (i.e., after EFA has been conducted; Brown, 2006; Fabrigar et al., 1999; Jackson, Gillaspay, & Purc-Stephenson, 2009). Unlike other statistical procedures (e.g., multiple regression, EFA), CFA allows relatively “error free” latent variables to be specified by correcting for biases that could result from random error and variance not attributable to the targeted constructs (Langdrige, Sheeran, & Connolly, 2007; MacCallum & Austin, 2000). Reaching model-fit criteria in CFA establishes the “conceptual soundness of the latent variables used in the final model,” which ensures that the conclusions drawn from the relationships between variables are not ‘misleading’ (Schreiber, Nora, Stage, Barlow, & King, 2006, p. 335). Consequently, in the current study, the factor structure of the GSDS will be further assessed using CFA.

#### **5.3 Sexual Minority Subsamples and Sexual Difficulties**

Typically in sexual functioning research, distinctions are not made between subsamples of sexual minority men (i.e., those who identify as “exclusively gay,” “more gay than heterosexual,” “bisexual,” or “more heterosexual than gay”). The term MSM, which describes sexual behavior as opposed to identity (Young & Meyer, 2005), has been used to encompass non-heterosexual orientations (e.g., Damon & Rosser, 2005; Hirshfield et al., 2010; Lau et al., 2008). A study conducted by Nazareth, Boynton, and King (2003) constitutes one of the few exceptions to this

trend. In their research, 447 men (and 1065 women) attending general practices in London served as participants. Several predictors of sexual difficulties were examined, such as demographic variables (e.g., age, ethnicity), psychological well-being, and physical health. When all predictors were assessed, identifying as bisexual was the only independent predictor of sexual difficulties in men.

Additionally, recent research has reported poorer levels of psychological well-being (i.e., anxiety, depression) among bisexual groups in comparison to gay and heterosexual men (e.g., Bostwick, Boyd, Hughes, & McCabe, 2010; Eisenberg, Gollust, Golberstein, & Hefner, 2007). To illustrate, Jorm, Korten, Rodgers, Jacomb, and Christensen (2002) found that bisexuals had significantly poorer mental health in comparison to gay men, even after risk factors for mental health (e.g., financial difficulties, childhood adversity, current adverse life events, and poor social support) were controlled. Given the association between psychological well-being and sexual difficulties (Chapter Three), it is hypothesised that levels of sexual difficulties will be greater for those who do not identify as “exclusively gay” (H1). In order to examine sexual difficulties in this subpopulation, the applicability of the GSDS’s factor structure for “non-exclusively gay” samples must be examined; hence, an invariance analysis will be conducted.

#### **5.4 Construct Validity**

The construct validity of the GSDS will be examined by testing hypotheses formulated in accordance with previous sexual functioning research. Specifically, the roles masculinity and body image play in relation to sexual difficulties will be examined. Each will be discussed.

**5.4.1 Masculinity.** Masculinity refers to all those qualities and activities that convey a sense of “maleness” to an individual (Philaretou & Allen, 2001). Masculinity is a socially constructed phenomenon in that social groups define what is and is not masculine (Sanchez, Greenberg, Liu, & Vilain, 2009). Much of the theoretical work on masculinity focuses on the concept of traditional (hegemonic) masculinity. This represents the form of masculinity endorsed by the dominant group in any given culture, and represents authority and power (Connell, 1987). According to David and Brannon (1976), and O’Neil (1981a, 1981b, 2008), traditional masculine ideology is governed by four rules: 1) men should not be feminine; 2) men should be successful, achieve power/status, and should readily compete against

others; 3) men should restrict their emotions, and should restrict their affectionate behavior with other men; and 4) men should seek out adventure and risk.

Abiding by the standards of hegemonic masculinity can have dangerous consequences for men's psychological functioning (Good, Heppner, DeBord, & Fischer, 2004; Goldberg, 1976; Harrison et al., 1992; Liu, Rochlen, & Mohr, 2005; Pollack, 1998; Sharpe & Heppner, 1991). For example, a man who refuses to take sick leave from work; insists that he needs little sleep; or boasts that drinking does not impair his driving is demonstrating dominant norms of masculinity (Courtenay, 2000). Additionally, men who attempt to fulfil the requirements of the traditional male role report greater interpersonal problems such as engaging in high-risk behaviors (Cohn & Zeichner, 2006; Jakupcak, 2003; Liu & Iwamoto, 2007) and report more difficulties within romantic relationships (Blazina & Watkins, 2000; Jakupcak, Lisak, & Roemer, 2002). For example, Burn and Ward (2005) surveyed a group of 307 heterosexual introductory psychology students ( $n = 170$  male;  $n = 137$  female) in the United States. Results indicated that male participants who conformed to traditional masculine norms were less satisfied with their intimate relationships. Specifically, men's scores on a measure of relationship satisfaction were negatively correlated with five subscales (i.e., Playboy [desire for multiple partners], Risk-Taking, Dominance, Violence, and Power over Women) of the Conformity to Masculine Norms Inventory (Mahalik et al., 2003). Furthermore, previous research has found that conforming to a rigid masculine ideology is positively associated with male body image concerns (McCreary, Saucier, & Courtenay, 2005; Olivardia, Pope, Borowiecki, & Cohane, 2004; Schwartz & Tylka, 2008; Tylka, Bergeron, & Schwartz, 2005). In particular, being muscular has been identified as a means through which a masculine identity can be demonstrated (Leit, Pope, & Gray, 2001; Pope, Olivardia, Gruber, & Borowiecki, 1999).

**5.4.1.1 Masculinity and Gay Men.** It is widely accepted that multiple masculinities exist (Connell, 2005) because, although hegemonic masculinity is the dominant ideal in a culture, not all men endorse it (Connell, 1995). It has been proposed (e.g., Connell, 1992; Halkitis, 2001; Levant, 1996; Levant et al., 2007) that, as a result of social influences, multiple masculinities take the form of a hierarchy, with traditional hegemonic masculinity at the top, and forms violating the hegemonic ideal underneath. One group which may have a distinct masculine ideology is gay men. A hatred of intimacy between men and a disdain for

homosexuality are components of the traditional masculine norm; thus, sexual minorities are excluded (Connell, 1992, 2005; Edwards, 1992; Halkitis, 2001; Levant et al., 2007; Thompson & Pleck, 1995). When a subpopulation's masculinity is under threat (Mosher & Tomkins, 1988; Spencer, Fegley, Harpalani, & Seaton, 2004), as it is for gay men (through their intimate relations with other men), the group can display hypermasculinity. Hypermasculinity is an exaggeration of the particular masculine characteristics that this subgroup is perceived to be lacking (Fischgrund, Halkitis, & Carroll, 2012; Halkitis, Green, & Wilton, 2004). To illustrate, examinations of gay men's personal advertisements suggest that gay men tend to stress exhibiting stereotypical masculine interests and behaviors, and tend to seek masculine partners (Bailey, Kim, Hills, & Linsenmeier, 1997; Laner & Kamel, 1978; Lumby, 1978; Phua, 2002; Taywaditep, 2002).

One way in which gay men compensate for their perceived effeminacy is by placing a greater emphasis on body shape and muscularity, as muscularity is seen a characteristic of masculinity (Gil, 2007; Kimmel & Mahalik, 2005; Pope et al., 2000; Wood, 2004). To illustrate, Kimmel and Mahalik (2005) examined conformity to masculine norms and body image dissatisfaction in an online sample of 357 self-identified gay men in the United States. The authors found that men who conformed to traditional masculine standards were more likely to report distress as a result of failure to achieve the ideal masculine body than men who did not attempt to conform to these masculine standards. Studies of HIV-positive men have also documented this hypermasculine ideology. For example, Halkitis (2001) qualitatively assessed constructions of masculinity among fifteen gay and bisexual HIV-positive men in New York City. The majority of the participants associated masculinity with physical appearance (i.e., toughness, vitality, and health) and sexual adventurism (i.e., having a greater interest in casual sex and having multiple sexual partners). Participants discussed pressures from the gay community to obtain a muscular masculine body, and referred to extreme body-enhancing behaviors that men engage in to achieve the ideal image and attract potential partners. Similar studies with HIV-positive gay men have found that muscularity and sexuality are closely associated with masculine ideals (Halkitis et al., 2004; Halkitis, Moeller, & DeRaleau, 2008). However, for these samples, this hypermasculine ideology may not simply be attributed to being a member of the gay community, but might be a response to the stigma associated with HIV infection (Sanchez et al., 2009).

Studies which have not focused specifically on HIV-positive samples also have documented a hypermasculine ideology in gay men. Sanchez et al. (2009) qualitatively examined the effects of masculine ideals in an Internet study of 547 self-identified gay men (age range = 18-80 years) in the United States. A set of six open-ended questions were used which focused on definitions of masculinity and femininity, the possible effects (positive and negative) of masculine ideals on one's self image, and the possible effects of masculine ideals on one's relationships. Masculinity was defined by these men in terms of physical appearance (i.e., having a muscular body), sexual behaviors (i.e., sexual promiscuity, sexual assertiveness), and social behaviors (i.e., being competitive, acting as a heterosexual). In terms of adverse effects, many men felt pressured to behave in a "super-masculine" way as a means of gaining acceptance. Others felt that trying to be masculine was futile as being gay contradicts masculine ideals (10%) and "true" masculinity cannot be achieved by gay men (13%). Masculine standards were seen to have a negative impact on well-being and some were likely to question their self-worth if they could not achieve desired masculine standards. For example, many reported that gay men engage in obsessive gym routines and diets, abuse drugs (e.g., anabolic steroids), and experience body dissatisfaction as they struggle to be and remain attractive. Moreover, masculine ideals were found to restrict one's emotional expression in relationships, for fear of being viewed as feminine.

Fischgrund et al. (2012) further examined hypermasculinity and its association to well-being (i.e., anxiety, depression, and hostility) in a sample of 311 self-identified gay and bisexual men recruited from 12 gyms in New York City. Three types of masculine constructions were assessed: 1) conceptions of masculinity as physical appearance (e.g., "Well-built men give the impression of masculinity at first sight"); 2) conceptions of masculinity as social behavior (e.g., "I watch my behavior to make sure that I act masculine around other gay men"); and 3) conceptions of masculinity as sexual behavior (e.g., "Sexual performance is an important part of masculinity"). Although well-being was not significantly associated with conceptions of masculinity as physical appearance in this study, those who exhibited higher levels of depression, anxiety, and hostility were significantly more likely to perceive masculinity as a social behavior and as a sexual behavior. Importantly, half of the participants endorsed this unique set of hypermasculine norms, demonstrating the importance of exaggerated masculine

norms for gay men. Taken together, these studies (Fischgrund et al., 2012; Halkitis, 2001; Sanchez et al., 2009) offer support for the multiple masculinities model; masculine norms are not uniform across sub-populations of men. Some gay men develop and integrate hypermasculine norms into their masculine ideology.

**5.4.1.2 Masculinity and Sexual Difficulties.** In relation to sexual difficulties, it has been reasoned that an “ill performing” penis is viewed as a loss of masculinity as men feel they are not adhering to societal standards of “being a man” (Tiefer, 1986; Zilbergeld, 1978, 1992). Early in life, boys are taught that “their manhood is tied to their penis, and having and using erections has something to do with masculinity” (Zilbergeld, 1992, p. 32). Normative masculine sexuality and sexual identity are defined so specifically that the action (attainment, sustainment and penetration) of an erect penis is essential (e.g., Brubaker & Johnson, 2008; Potts, 2004; Rubin, 2004). According to Rosen and Leiblum (1988), sexual difficulties which result from feelings of incompatibility with a partner can present a challenge to one’s masculinity and result in lower levels of sexual satisfaction. Similarly, participants in Study 2 (Chapter Three) discussed the critical role of masculine standards in the experience of physical and psychological/interpersonal sexual difficulties. Many participants viewed penis function as integral to one’s identity as a man, and impairment to sexual function was seen as a loss of one’s masculine identity.

Research in the field of sexual function and masculinity has mostly focused on men’s experience of erectile disorder following prostate cancer. Findings suggest that the norms associated with hegemonic masculinity are implicated in men’s experience of erectile disorder following prostatectomy-induced impotence (Burns & Mahalk, 2008; Gray et al., 2002; Oliffe, 2005). In one of the few studies to include gay men, Fergus, Gray and Fitch (2002) interviewed 18 individuals (14 heterosexual, four gay) who were treated for prostate cancer. Results indicated that participants redefined their sexuality and preference for penetrative sex when “potency” was lost. For example, articulating his struggle with masculinity after loss of erectile function, one gay participant reported: “For many gay men, if my erection isn’t as, not just as long and as big and as fat, but as prolonged as his... you become lesser, not only lesser male, you become lesser gay I think” (Fergus et al., 2002, p. 310). One could interpret this to signify that erectile difficulties are particularly distressing for gay men; not only is one’s masculinity impaired but so, too, is one’s status as a gay man.

Thus far, however, the available research has not examined the relationship between masculine standards and sexual difficulties in men who do not have a life-threatening illness; the current study will address this gap in the literature.

**5.4.2 Body Image.** Body image is a multidimensional construct which encompasses one's degree of satisfaction (or dissatisfaction) with one's body, and the behavioral and cognitive importance one assigns to one's appearance and body (Ryan, Morrison, & McDermott, 2010). In the past 25 years, the subject of male body image has received greater attention, with researchers documenting how the male physique is represented in cultural artefacts such as magazines (e.g., Farquhar & Wasylikiw, 2007; Harrison & Bond, 2007; Lanzieri & Cook, 2013; Leit et al., 2001; Olivardia, 2002), toys (Pope et al., 1999), and television programmes (Fouts & Vaughan, 2002; Lin, 1998; Soulliere & Blair, 2006). The ideal male body often portrayed in the media is impossible for the majority of men to achieve (Leit et al., 2001). This ideal is a mesomorphic v-shaped body with broad shoulders and a well-developed upper body, with a flat stomach and narrow hips (Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986; Pope et al., 2000). Given the discrepancy between this ideal and the actual bodies of real men, it is not surprising that an increasing number of researchers have reported that substantial proportions of men are dissatisfied with their physical appearance (Hatoum & Belle, 2004; Morrison, Morrison, & McCann, 2006; Olivardia et al., 2004; Vartanian, Giant, & Passino, 2001; Tiggemann, Martins, & Kirkbride, 2007). Furthermore, body dissatisfaction has been related to negative health consequences such as eating pathology, depression, low self-esteem, steroid abuse, and obsessive exercise (e.g., Cafri, Strauss, & Thompson, 2002; Olivardia, 2002; Olivardia et al., 2004).

**5.4.2.1 Body Image and Gay Men.** Several researchers have documented that, in comparison to heterosexual men, gay men evidence greater degrees of body image dissatisfaction (e.g., Gil, 2007; Levesque & Vichesky, 2006; Yelland & Tiggemann, 2003). For example, Morrison, Morrison, and Sager (2004a) conducted a meta-analysis of body satisfaction and dissatisfaction in heterosexual men and gay men, and heterosexual women and lesbian women. A total of 27 papers (20 published and seven unpublished) were reviewed from 1983 to 2003; 20 of which included male participants. These studies yielded a total of 37 samples ( $N = 5220$ ), which included 1397 heterosexual men, 984 gay men, 1391 heterosexual women, and 1448 lesbian women. Despite finding that gay men's body mass was lower than

their heterosexual counterparts in most cases, the results demonstrated that research consistently finds greater levels of body dissatisfaction among gay men. More recently, Tiggemann et al. (2007) compared the body ideals and body dissatisfaction of gay ( $n = 134$ ) and heterosexual ( $n = 119$ ) men in Australia (18.6% of participants were from outside Australia). When assessed on figure ratings of adiposity, both gay and heterosexual men saw their ideal body as thinner than their current body. The desire for a more muscular physique was pronounced in both groups; over 80% of gay and heterosexual men rated their ideal body as more muscular than their current body. Overall, however, body dissatisfaction was greater for gay participants.

One possible explanation posited for why gay men's body satisfaction may be compromised concerns gay male subculture which places an emphasis on physical attractiveness (e.g., Atkins, 1998; Epel, Spanakos, Kasl-Godley, & Brownell, 1996; Levesque & Vichesky, 2006; Morrison et al., 2004a; Siever, 1994; Williamson, 1999). This emphasis may be due to the need to attract other men, who are more concerned with the physical attractiveness of their partners than are women (Feingold, 1991; Siever, 1994). Additionally, gay men report greater pressure to look good from peers (Hospers & Jansen, 2005). To illustrate, Yelland and Tiggemann (2003) examined body image concerns in a sample of 52 gay men, and comparison samples of heterosexual men ( $n = 51$ ) and women ( $n = 55$ ). The authors reported that the perceived importance of appearance, weight, and muscularity to others was negatively correlated with self-esteem for gay participants only. Their findings suggest that gay men may experience additional pressures from within the gay community to achieve the ideal body shape. Consequently, it is not surprising that gay men, particularly those heavily immersed in this appearance-oriented subculture, could be at greater risk for body image issues (Morrison et al., 2004a). Another possible explanation for gay men's body dissatisfaction relates to the societal standards of masculinity, discussed previously. The increasing importance of muscularity may reflect the tendency to associate muscularity with masculinity (e.g., Halkitis et al., 2004; Mishkind et al., 1986).

**5.4.2.2 Body Image and Sexual Difficulties.** With respect to sexual difficulties, a growing area of research highlights the role of body image issues. In this regard, body image may include an evaluation of one's overall physical attractiveness as well as evaluations of specific body parts (e.g., genitals and buttocks; McDonagh, Morrison, & McGuire, 2008). In sexual situations, the body is

the central focus of one's attention; thus, one's body image can become increasingly negative (Aubrey, 2007; Haimovitz, Lansky, & O'Reilly, 1993). The term body image self-consciousness has been used to describe how concerned one is with one's physical appearance during physical intimacy. In an examination of this construct with 136 men ( $n = 123$  heterosexual;  $n = 13$  gay) from the Republic of Ireland, McDonagh et al. (2008) found that body image self-consciousness during physical intimacy was fairly common among men. For example, approximately 38% of participants agreed/strongly agreed that, "During sexual activity, I would be concerned about how my body looks to a partner" and 35% agreed/strongly agreed that, "If a partner were to see me nude I would be concerned about the overall muscularity of my body." Body image self-consciousness during sexual intimacy was positively associated with body dissatisfaction, sexual anxiety, and the drive for muscularity, and was negatively associated with sexual esteem.

Sexual performance can be impaired when individuals are distracted by concerns regarding their physical appearance, resulting in an inability to relax and experience sexual pleasure (Barlow, 1986; Dove & Wiederman, 2000; Fredrickson & Roberts, 1997; Masters & Johnson 1970; Sanchez & Keifer, 2007). For instance, Meana and Nunnink (2006) investigated the relationship between two types of cognitive distraction (appearance-based distraction [i.e., concerns about one's appearance] and performance-based distraction [i.e., concerns about one's performance]) and sexual functioning. Sexual function was assessed using the Sexual History Form (Creti et al., 1998) and the Derogatis Sexual Functioning Inventory (Derogatis, 1978). Participants were 457 ( $n = 220$  men;  $n = 237$  women) heterosexual college students from the United States. Using multiple regression analyses, the relationship between cognitive distraction and ten predictor variables (i.e., affect, psychological distress, knowledge of sexuality, sexual attitudes, sexual fantasies, sexual experience, body image, sexual satisfaction, sexual functioning, and relationship status) was examined. Body image emerged as the strongest predictor of appearance-based and performance-based distraction (i.e., negative body image was associated with greater levels of both appearance-based and performance-based distraction).

Similarly, Sanchez and Keifer (2007) examined the relationship between body shame (i.e., the degree to which one feels that they are a bad person if they do not meet the cultural body ideal), body image self-consciousness during intimacy

(i.e., sexual self-consciousness, measured using the female version of the Body Image Self-Consciousness Scale; Wiederman, 2000), and sexual difficulties. Three sexual difficulties were examined: 1) orgasmic difficulties (measured using the following two items: “How often do you reach orgasm during sexual activity with your partner” and “How often do you have difficulty reaching orgasm with your partner”; Kiefer, Sanchez, Kalinka, & Ybarra, 2006); 2) arousal difficulties (measured using the Sexual Arousability Index; Andersen, Broffitt, Karlsson, & Turnquist, 1989); and 3) sexual pleasure (measured using three items assessing the extent to which participants experienced sexual intercourse, sexual activities, and sexual intimacy as pleasurable; Sanchez, Crocker, & Boike, 2005). Participants were heterosexual men ( $n = 122$ ) and women ( $n = 198$ ) recruited via the Internet across the United States. Using structural equation modelling, the authors reported that the relationship between body shame and sexual difficulties was mediated by sexual self-consciousness during physical intimacy. Specifically, body shame was associated with higher levels of sexual self-consciousness, which in turn predicted lower sexual arousability and sexual pleasure.

To summarise, body image self-consciousness appears to play a role in the experience of sexual difficulties. However, the studies conducted thus far have focused on heterosexual men and women. Given the higher rates of body image dissatisfaction among gay men (e.g., Morrison et al., 2004a), an empirical examination of body image self-consciousness and its role in sexual function for gay men is warranted; this chapter will address this omission.

**5.4.3 Masculinity, Body Image, and Sexual Difficulties.** To the author’s knowledge, no research to date has examined the relationship between masculinity, body image and sexual difficulties. One study, however, has investigated body image and masculinity in relation to sexual satisfaction. Daniel and Bridges (2012) tested these associations using a sample of 153 male college students in the United States ( $M$  age = 21.43,  $SD = 4.05$ ). Body image was assessed on four dimensions: the drive for muscularity – attitudes and behaviors (McCreary & Sasse, 2000), body shame, and body surveillance (i.e., two subscales of the Objectified Body Consciousness Scale; McKinley & Hyde, 1996). Masculinity was assessed using the Personal Attributes Questionnaire (Spence & Helmreich, 1979), which measures the degree to which a person can be classified according to masculine or feminine adjectives. The Personal Attributes Questionnaire has three subscales which assess instrumental

masculinity (i.e., personality traits such as aggressiveness, dominance, competitiveness, and self-confidence), expressive femininity (i.e., personality traits such as being emotional, talkative, and nurturing), and masculinity-femininity (i.e., androgynous personality traits such as submissive-dominant). Sexual satisfaction was assessed using a subscale of the Extended Satisfaction with Life Scale (Alfonso, Allison, Radar, & Gorman, 1996) which is a five-item measure of general sexual satisfaction. Results indicated that masculinity was the only significant predictor of sexual satisfaction in this sample. However, the majority of participants were heterosexual (85%); thus, generalisability of the findings to gay men is questionable. Also the focus of this study was sexual satisfaction, not sexual difficulties. These two variables are interrelated (e.g., gay men with sexual difficulties report less sexual satisfaction compared to sexually functional gay men [Cove & Boyle, 2002; Damon & Rosser, 2005; Dupras & Morisset, 1993; Rosser et al., 1997]); however, the relationship between masculinity, body image self-consciousness and sexual difficulties remains unexplored.

### **Summary**

Body image concerns have been found to relate to sexual difficulties (Sanchez & Kiefer, 2007) and masculine standards have been found to influence sexual satisfaction (Daniel & Bridges, 2012). However, these associations have not been empirically examined in a sample of gay men. The importance of testing these constructs in gay men is strengthened by the findings that gay men are at greater risk for body dissatisfaction than their heterosexual counterparts (Morrison et al., 2004a) and may experience increased pressure to conform to unrealistic societal standards of masculinity (Fischgrund et al., 2012; Sanchez et al., 2009). The aim of this chapter, therefore, is to investigate the role of body image self-consciousness and masculine standards in the experience of sexual difficulties for gay men. This examination will also provide evidence for the construct validity of the Gay Sexual Difficulties Scale.

## **5.5 Method**

### **5.5.1 Participants**

The initial sample consisted of 1342 men who ranged in age from 18 to 76 years ( $M = 34.23$   $SD = 11.94$ ). Men who self-identified as “more gay than heterosexual” ( $n = 162$ ), “bisexual” ( $n = 42$ ), “more heterosexual than gay” ( $n = 9$ ) and “other” ( $n = 5$ ) were excluded from initial analyses. Therefore, the final sample was comprised of 1124 “exclusively gay” men who ranged in age from 18 to 76

years ( $M = 34.38$ ,  $SD = 11.64$ ). The sample was randomly divided into Data Set A ( $n = 562$ , age range = 18-73 years,  $M = 34.35$ ,  $SD = 11.62$ ) and Data Set B ( $n = 562$ , age range = 18-76 years,  $M = 34.41$ ,  $SD = 11.67$ ) for analyses. Participants from Study 3 who did not identify as “exclusively gay” (i.e., more gay than heterosexual [ $n = 163$ ], bisexual [ $n = 46$ ], more heterosexual than gay [ $n = 17$ ], other [ $n = 6$ ]) were combined with those from the current sample to create Data Set C ( $n = 450$ , age range = 18-76 years,  $M = 32.49$ ,  $SD = 12.91$ ). For Data Set A, approximately 50% of participants were from North America ( $n = 283$ ), 35% were from Europe ( $n = 196$ ), 6% were from Oceania ( $n = 34$ ), 4% were from Africa ( $n = 22$ ), 4% were from Asia ( $n = 22$ ), and 1% were from South America ( $n = 5$ ). For Data Set B, approximately 52% of participants were from North America ( $n = 293$ ), 34% were from Europe ( $n = 192$ ), 7% were from Oceania ( $n = 37$ ), 4% were from Africa ( $n = 24$ ), 1% were from Asia ( $n = 7$ ), and 2% were from South America ( $n = 9$ ). For Data Set C, approximately 48% of participants were from North America ( $n = 215$ ), 33% were from Europe ( $n = 146$ ), 6% were from Oceania ( $n = 26$ ), 4% were from Africa ( $n = 20$ ), 8% were from Asia ( $n = 37$ ), and 1% were from South America ( $n = 6$ ). Demographic characteristics of the each sample are presented in Table 5.1.

### 5.5.2 Procedure

The procedure employed was the same as that outlined in Study 3 (see pages 64-65).

### 5.5.3 Data Collection

The data collection processes employed were the same as those outlined in Study 3 (see page 65).

### 5.5.4 Measures

**Male Body Image Self-Consciousness** (M-BISC; McDonagh et al., 2008; McDonagh, Morrison, & McGuire, 2010). The M-BISC is a 17-item measure of how self-conscious men feel about their body while engaging in sexual relations.

Responses are coded on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Scores are obtained by summing responses to all items (possible range is from 17 to 85). Higher scores denote higher levels of body image self-consciousness.

With respect to the scale’s psychometric properties, McDonagh et al. (2008) reported findings in support of the scale’s reliability ( $\alpha = .92$ ; 95% CI = .90-.94) and validity (i.e., as predicted, positive correlations were noted between scores on the M-BISC and scores on measures of body dissatisfaction, sexual anxiety, and the drive

for muscularity, and negative correlations were noted between the M-BISC and a measure of sexual esteem). In the current investigation, alpha coefficients were .90 for Data Set A (95% CI = .89-.91), .90 for Data Set B (95% CI = .89-.91), and .90 for Data Set C (95% CI = .87-.91).

**Revised Auburn Differential Masculinity Inventory (R-ADMI;** Bishop, Kiss, Morrison, Rushe, & Specht, in press; Burk, Burkhart, & Sikorski, 2004). The R-ADMI is a 19-item inventory with assesses hypermasculinity. The R-ADMI is a revised version of the 60-item Auburn Differential Masculinity Inventory (ADMI; Burk et al., 2004), suitable for use with gay men. Responses are coded on a five-point Likert scale (0 = not at all like me; 4 = very much like me). Responses to all items are summed (possible range is from 0 to 76), with higher scores denoting higher levels of hypermasculinity.

Research suggests the scale is psychometrically promising. In relation to the original 60-item version, Burk et al. (2004) reported findings in support of the ADMI's reliability ( $\alpha = .81$ ) and validity (e.g., as predicted, a positive correlation was noted between scores on the ADMI and scores on another hypermasculinity measure). With respects to the revised measure, Bishop et al. (in press) reported findings in support of the R-ADMI's reliability ( $\alpha = .94$ ; 95% CI = .92-.96) and validity. Specifically, in a sample 118 self-identifying non-heterosexual men, PCA confirmed a one-component solution, with component loadings ranging from .55 to .84. Additionally, as hypothesised, a positive correlation was noted between scores on the R-ADMI and stereotypes about drag queens (Bishop et al., in press). In the current investigation, alpha coefficients were .81 for Data Set A (95% CI = .78-.83), .83 for Data Set B (95% CI = .81-.85), and .84 for Data Set C (95% CI = .81-.87).

### 5.5.5 Data Analytic Strategy

**Missing Data.** Little's MCAR test (Little, 1988) was used to determine whether missing values were MCAR for the measures being examined. In the current study, Little's test was statistically non-significant for all measures; thus, similarly to Study 3, EM methods were employed (see page 69).

**Confirmatory Factor Analysis.** To investigate the factor structure of the GSDS which emerged in Study 3, Data Sets A and B were subjected to CFA. Alpha coefficients (and 95% confidence intervals) for the total scale and subscales were assessed, and subscale inter-correlation analyses were conducted.

Model fit, or how adequately each item resides within a model (Byrne, 2010), was assessed using multiple criteria as per Kline's (2011) recommendations. In the current study, absolute fit was examined using the chi-square/*df* ratio (*Q*) and the Root Mean Square Error of Approximation (RMSEA); comparative fit was assessed using Bentler's comparative fit index (CFI). Stringent thresholds were used to assess model fit:  $Q < 5$ ,  $RMSEA \leq .08$ ,  $CFI \geq .90$  signify adequate fit while  $Q \leq 2$ ,  $RMSEA \leq .06$ , and  $CFI \geq .95$  denote excellent fit (Byrne, 2010; Tabachnick & Fidell, 2007). Although the chi-square statistical significance test (where statistical non-significance suggests good model fit to data) is not very useful when determining the fit of a single model, and is almost always statistically significant for large samples (i.e., greater than 400), it is reported as per current guidelines (Kline, 2011; Thompson, 2004). The Akaike Information Criterion (AIC) and delta AIC ( $\Delta$  AIC; i.e., larger AIC minus smaller AIC) were employed to compare the relative fit of competing models; the superior model is the one with the lower AIC value. According to Burnham and Anderson (2002), support for the model with the higher AIC is indicated by  $\Delta$  AIC values of 0 to 2, less support is suggested by values of 4 to 7, and values of 10 or greater indicate no support for the inferior model.

Item redundancy was assessed through an examination of modification indices (i.e., the expected drop in chi-square value if the parameter were to be freely estimated in a subsequent run) and regression weights of item pairs (Byrne, 2010; Thompson, 2004). Additionally, the content of item pairs with high modification indices was examined and models were only re-specified if theoretical justification for the changes was established (Thompson, 2004). If the statistical analysis was supported by the content analysis, the item with the lowest standardised coefficient was deleted and model fit was reassessed.

**Invariance Analysis.** Multiple group analyses in structural equation modeling are sensitive to unequal sample sizes (i.e., the larger group can exert more influence on the results than the smaller group; Arbuckle, 2011). As Data Set A ( $n = 562$ ) was slightly larger than Data Set C ( $n = 450$ ), a random sub-sample of Data Set A ( $n = 450$ ; age range = 18-71 years,  $M = 34.25$ ,  $SD = 11.37$ ) was selected for invariance analyses.

Subsequent to establishing baseline models for each sample (i.e., Data Set A and Data Set C) separately, several different levels of testing measurement invariance are recommended (Byrne, 2004; Vandenberg & Lance, 2000). Each

model serves as a basis for the preceding model. First, configural invariance is examined. Configural invariance examines whether the items load onto the same factor for both groups. In this model, all parameters (factor loadings, intercepts, variances, covariances,) are freely estimated for each group. Second, omnibus invariance is assessed. Omnibus invariance assesses the equality of the covariance matrices across groups (Vandenberg & Lance, 2000). In this model, all parameters are constrained to be equal; if invariance is established at this level, further tests are not required (Byrne, 2004). Third, metric invariance (i.e., weak) is examined. This model is the same as the configural model, except that all factor loadings are constrained to be equal across groups. Fourth, scalar invariance (i.e., strong) is assessed; item intercepts and factor loadings are constrained to be equal across groups. Fifth, residual invariance (i.e., strict) is examined; residual item variances, item intercepts, and factor loadings are constrained to equal across groups.

Models were compared using the chi-square difference test; a statistically significance result suggests the model with the smaller chi-square value has better fit. However, with large samples (i.e., greater than 300), trivial differences can result in a statistically significant test (Hu & Bentler, 1999; Milfont & Fischer, 2010). Thus, the chi-square difference test was used as an indication of improvement, and fit indices were used to assess model fit.

**Normality.** Distributions of scores on the measures being used were inspected for univariate and multivariate normality throughout the research. Prior to conducting CFA, data were inspected for multivariate normality, an assumption of factor analysis. Using Mahalanobis distance analysis, multivariate outliers were identified. Eighteen cases from Data Set A, 17 cases from Data Set B, and 12 cases from Data Set C exceeded the critical value of 22.46 (the six variables assessed were RAD, IAD, ED, BE, SFC, and FD) and, thus, were removed from further analyses. Following the removal of outliers, maximum likelihood (ML) estimation was used (Byrne, 2010).

Subsequent to CFA, the revised GSDS and subscales (and validation measures) were examined for univariate normality. Most of the variables fell within an acceptable range of skew values ( $< .80$ ) and kurtosis ( $< 3$ ; Tabachnick & Fidell, 2007)<sup>14</sup>. The exceptions to this were the erectile difficulties subscale, the body embarrassment subscale, the seminal fluid concerns, the foreskin difficulties subscale, and the masculinity measure (for Data Set B only), all of which were

positively skewed. Logarithmic transformations were conducted on these variables. Skewness and kurtosis was reduced to acceptable levels for all (see Table 5.2). Means and standard deviations reported are from the original data.

## 5.6 Results

### 5.6.1 Model Fit: Gay Sexual Difficulties Scale, Data Set A

The original 47-item GSDS did not possess adequate model fit:  $\chi^2_{(1019)} = 5002.54, p < .001; Q = 4.91; RMSEA = .083$  (90% CI: .081-.086); CFI = .76; and AIC = 5240.94.

Modification indices suggested that seven RAD items (i.e., 1, 2, 6, 9, 11, 12, and 13), five IAD items (i.e., 17, 18, 21, 22, and 23), four ED items (i.e., 26, 27, 30, and 31), one BE item (i.e., 36), and four SFC items (i.e., 40, 41, 42, and 43), were redundant and could be deleted. Additionally, item 10 from the RAD, cross-loaded with the BE factor and was removed.

The model was rerun after deletion of these items; however, the fit statistics remained poor:  $\chi^2_{(260)} = 1002.11, p < .001; Q = 3.85; RMSEA = .071$  (90% CI: .067-.076); CFI = .90; AIC = 1132.11; and  $\Delta AIC = 4108.83$ .

Re-examination of the modification indices suggested that four pairs of items should be covaried: items 7 and 8 on the RAD (“Have you had difficulty engaging in receptive anal intercourse because your partner’s penis is too small” and “Were you unable to engage in receptive anal intercourse because your ass was too loose”); items 19 and 20 on the IAD (“Have you had difficulty engaging in insertive anal intercourse because your penis is too big”, and “Were you unable to engage in insertive anal intercourse because your partner’s ass was too tight”), items 25 and 29 on the ED (“When you wanked, were you able to get an erection”, and “When you wanked, were you able to maintain your erection”), and items 44 and 45 on the FD (“When you engaged in sexual activity, did you experience any difficulties because your foreskin is too tight” and “When you wanked, did you experience any difficulties because your foreskin is too tight”). These items appeared to be thematically related, providing theoretical justification for the addition of covariances.

Fit statistics for the resultant 25-item model, with four covariances, were excellent:  $\chi^2_{(256)} = 498.96, p < .001; Q = 1.94; RMSEA = .041$  (90% CI: .036-.046); CFI = .97; AIC = 634.96; and  $\Delta AIC = 497.15$ . The chi-square difference test was statistically significant,  $\chi^2_{diff(4)} = 503.15, p < .001$ , demonstrating the addition of

covariances greatly improved the model fit. Fit statistics for the original and revised models for Data Set A are presented in Table 5.3. The path diagram for the final model for Data Set A is presented in Figure 5.1.

All of the subscales were weakly positively correlated ( $r_s = .09-.38$ ,  $p_s < .05$ ), except for the ED and IAD, and ED and FD ( $p_s = .757$  and  $.247$ , respectively) suggesting the subscales measure distinct but related concepts. Subscale correlations for Data Set A are presented in Table 5.4. Standardised coefficients ranged from .59 to .86 ( $M = .72$ ; RAD), .56 to .83 ( $M = .64$ ; IAD), .57 to .83 ( $M = .70$ ; ED), .78 to .92 ( $M = .84$ ; BE), .73 to .83 ( $M = .80$ ; SFC), and .70 to .95 ( $M = .82$ ; FD).

### 5.6.2 Model Fit: Gay Sexual Difficulties Scale, Data Set B

The six-factor model (25 items), identified in Data Set A, provided poor fit to the data:  $\chi^2_{(260)} = 1029.31$ ,  $p < .001$ ;  $Q = 3.96$ ; RMSEA = .073 (90% CI: .068-.077); CFI = .89; and AIC = 1159.31.

Examination of the modification indices suggested that the same four pairs of items which were covaried for Data Set A (i.e., items 7 and 8; items 19 and 20; items 25 and 29; and items 44 and 47), should also be covaried for Data Set B. Fit statistics for the resultant 25-item model, with four covariances, provided excellent fit to the data:  $\chi^2_{(256)} = 470.95$ ,  $p < .001$ ;  $Q = 1.84$ ; RMSEA = .039 (90% CI: .033-.044); CFI = .97; AIC = 608.95; and  $\Delta AIC = 550.36$ . The chi-square difference test was statistically significant,  $\chi^2_{diff(4)} = 558.36$ ,  $p < .001$ , demonstrating the inclusion of four covariances greatly improved the model fit. For Data Set B, a summary of the fit statistics for each model are presented in Table 5.5 and the path diagram for the final model is presented in Figure 5.2.

All of the subscales were weakly positively correlated ( $r_s = .09-.29$ ,  $p_s < .05$ ), except for the ED and FD ( $p = .324$ ). Subscale correlations for Data Set B are presented in Table 5.4. Standardised coefficients ranged from .59 to .88 ( $M = .73$ ; RAD), .50 to .81 ( $M = .60$ ; IAD), .55 to .89 ( $M = .69$ ; ED), .82 to .93 ( $M = .86$ ; BE), .71 to .76 ( $M = .74$ ; SFC), and .73 to .97 ( $M = .83$ ; FD).

### 5.6.3 Reliability Analysis, Data Sets A and B

For Data Sets A and B, alpha coefficients for the 25-item GSDS were good:  $\alpha_s = .82$  (95% CI = .80-.84) and  $.82$  (95% CI = .79-.84), as were those for the six subscales:  $\alpha_s = .81$  and  $.82$  (RAD);  $.77$  and  $.74$  (IAD);  $.82$  and  $.82$  (ED);  $.90$  and  $.92$  (BE);  $.83$  and  $.76$  (SFC);  $.91$  and  $.91$  (FD), respectively. Alpha coefficients and 95%

confidence intervals for the GSDS and all subscales (and validation measures) as well as means, standard deviations, and score ranges are presented in Table 5.6.

For Data Set A, the mean inter-item correlation was .53 for the RAD (range = .41-.64); .44 for the IAD (range = .25-.64); .54 for the ED (range = .42-.67); .70 for the BE (range = .63-.78); .63 for the SFC (range = .60-.69); and .72 for the FD (range = .61-.84). Item variances ranged from 0.24 to 2.76 ( $M = 1.43$ ) for the RAD; 0.58 to 1.99 ( $M = 1.34$ ) for the IAD; 0.32 to 0.74 ( $M = 0.52$ ) for the ED; 1.34 to 1.68 ( $M = 1.51$ ) for the BE; 0.34 to 0.59 ( $M = 0.43$ ) for the SFC; and 0.45 to 0.81 ( $M = 0.58$ ) for the FD.

For Data Set B, the average inter-item correlation was .55 for the RAD (range = .43-.68); .39 for the IAD (range = .29-.57); .55 for the ED (range = .43-.75); .73 for the BE (range = .69-.80); .55 for the SFC (range = .54-.56); and .73 for the FD (range = .60-.87). Item variances ranged from 0.27 to 2.84 ( $M = 1.39$ ) for the RAD; 0.59 to 2.01 ( $M = 1.24$ ) for the IAD; 0.37 to 0.94 ( $M = 0.61$ ) for the ED; 1.29 to 1.54 ( $M = 1.38$ ) for the BE; 0.25 to 0.53 ( $M = 0.35$ ) for the SFC; and 0.43 to 0.83 ( $M = 0.60$ ) for the FD.

#### 5.6.4 Invariance Analysis and Sexual Minority Subsamples, Data Sets A and C

First, a baseline assessment was conducted to assess model fit of the hypothesised model (with four covariances) for both groups (i.e., Data Set A and Data Set C) separately. Model fit was excellent for both: Data Set A,  $\chi^2_{(256)} = 498.96$ ,  $p < .001$ ;  $Q = 1.94$ ; RMSEA = .041 (90% CI = .036-.046); CFI = .97; AIC = 634.96; and Data Set C,  $\chi^2_{(256)} = 480.41$ ,  $p < .001$ ;  $Q = 1.88$ ; RMSEA = .044 (90% CI = .038-.050); CFI = .96; and AIC = 618.41. Examination of delta AIC suggests the model fit for Data Set C is superior (i.e.,  $\Delta AIC = 16.55$ ; Burnham & Anderson, 2002).

Second, configural invariance was assessed to establish model fit across sexual orientation. This level of invariance was confirmed:  $\chi^2_{(512)} = 949.83$ ,  $p < .001$ ;  $Q = 1.86$ ; RMSEA = .031 (90% CI = .028-.034); CFI = .96; and AIC = 1225.83.

Third, omnibus invariance was assessed. Fit statistics for this level of invariance were adequate:  $\chi^2_{(579)} = 1270.18$ ,  $p < .001$ ;  $Q = 2.19$ ; RMSEA = .036 (90% CI = .034-.039); CFI = .94; and AIC = 1412.18. The chi-square difference test was statistically significant,  $\chi^2_{diff(67)} = 320.35$ ,  $p < .001$ , implying some equality constraints are not invariant across sexual orientation. Furthermore, the AIC figure for the fully constrained model was greater than for the unconstrained model

(1412.18 versus 1225.83,  $\Delta$  AIC = 186.35) suggesting the unrestricted model (i.e., configural invariance) provided better model fit.

Examination of the modification indices suggested that model fit could be improved through the removal of the covariance between items 44 and 45, and the addition of covariances between four pairs of items: items 25 and 28 on the ED (“When you wanted, were you able to get an erection”, and “When you engaged in sexual activity, were you able to maintain your erection”); items 32 and 33 on the BE (“When you engaged in sexual activity, were you embarrassed that your partner thought your body is too fat”, and “When you engaged in sexual activity, were you embarrassed that your partner thought your body wasn’t muscular”); items 44 and 47 on the FD (“When you engaged in sexual activity, did you experience any difficulties because your foreskin is too tight”, and “Have you had any difficulties putting on a condom because your penis has too much foreskin”); and items 46 and 47 on the FD (“When you engaged in sexual activity, did you experience any difficulties because your penis has too much foreskin”, and “Have you had any difficulties putting on a condom because your penis has too much foreskin”). These items seemed to be theoretically related, providing justification for covariances among them.

Following these modifications, excellent model fit was achieved for the restricted model (i.e., omnibus invariance):  $\chi^2_{(576)} = 1200.05$ ,  $p < .001$ ;  $Q = 2.08$ ; RMSEA = .035 (90% CI = .032-.037); CFI = .95; and AIC = 1348.05. The chi-square difference test between the model with four covariances and the model with seven covariances was statistically significant,  $\chi^2_{diff(3)} = 70.13$ ,  $p < .001$ , suggesting the additional covariances improved model fit. Additionally, the AIC figure for the fully constrained model with seven covariances was less than that for the fully constrained model with four covariances (1348.05 versus 1412.18,  $\Delta$  AIC = 64.13) suggesting the model with seven covariances provided better model fit.

The omnibus model (seven covariances) was compared to the configural model. The chi-square difference test was statistically significant,  $\chi^2_{diff(64)} = 250.22$ ,  $p < .001$ , and the AIC figure for the unconstrained model was less than that for the fully constrained model (1225.83 versus 1348.05,  $\Delta$  AIC = 122.22) implying the unrestricted model provided better fit. However, as fit statistics for the restricted model were excellent, this stringent level of invariance was achieved, and further invariance testing (i.e., metric, scalar, and residual) was unnecessary (Byrne, 2004;

Vandenberg & Lance, 2000). A summary of fit statistics for each level of invariance is present in Table 5.7. The path diagram for the omnibus invariance model is presented in Figure 5.3.

Scores on each subscale of sexual difficulties were compared for “exclusively gay men” and “non-exclusively gay men”. A series of independent samples *t*-tests revealed that non-exclusively gay men scored significantly higher on four subscales and overall sexual difficulties: receptive anal difficulties [ $t_{(717)} = -2.23, p = .026, d = 0.17$ ]; insertive anal difficulties [ $t_{(718)} = -2.39, p = .017, d = 0.18$ ]; erectile difficulties [ $t_{(896)} = -2.19, p = .029, d = 0.15$ ]; seminal fluid concerns [ $t_{(821.49)} = -3.49, p = .001, d = 0.24$ ]; overall sexual difficulties [ $t_{(898)} = -2.98, p = .003, d = 0.20$ ]. Means and standard deviations for each group on all of the indicants of sexual difficulties are provided in Table 5.8.

### 5.6.5 Reliability Analysis, Data Set C

For Data Set C, alpha coefficients for the 25-item GSDS were good,  $\alpha = .80$  (95% CI = .77-.82), as were those for the six subscales;  $\alpha$ s = .82 (RAD), .75 (IAD), .84 (ED), .89 (BE), .82 (SFC), and .87 (FD). Alpha coefficients for the GSDS and all subscales (and validation measures), as well as means standard deviations, and score ranges are presented in Table 5.6. The mean inter-item correlation was .55 for the RAD (range = .44-.65); .39 for the IAD (range = .27-.64); .57 for the ED (range = .42-.73); .68 for the BE (range = .64-.72); .62 for the SFC (range = .53-.70); and .64 for the FD (range = .51-.87). Item variances ranged from 0.26 to 2.79 ( $M = 1.62$ ) for the RAD; 0.83 to 2.22 ( $M = 1.39$ ) for the IAD; 0.43 to 0.79 ( $M = 0.61$ ) for the ED; 1.33 to 1.53 ( $M = 1.44$ ) for the BE; 0.56 to 0.96 ( $M = 0.72$ ) for the SFC; and 0.53 to 1.04 ( $M = 0.74$ ) for the FD. Most of the subscales were weakly positively correlated ( $r$ s = .10-.42,  $p$ s < .05), except for the BE and IAD ( $p = .312$ ), BE and FD ( $p = .062$ ), FD and ED ( $p = .453$ ), FD and SFC ( $p = .190$ ).

### 5.6.6 Construct Validity

Based on previous research, relations between sexual difficulties and body image self-consciousness and hypermasculinity were assessed to provide evidence for the construct validity of the GSDS. Pearson Product Moment correlations and hierarchical multiple regression analyses were employed to evaluate these relationships. Assumptions for regression analysis (e.g., normal distribution, autocorrelations among residuals) were tested, with no violations being identified.

Similar to Study 3, the “not applicable” option for the GSDS was coded as missing values for validity analyses. Each test will be detailed next.

Several correlations that were trivial were found to be statistically significant. Observations presented here will be restricted to those that possess practical significance (i.e., 5% of variance accounted for). A summary of all correlations for each data set are presented in Tables 5.9.

**5.6.6.1 Body Image and Sexual Difficulties.** A series of Pearson Product Moment correlations were conducted to assess the relationships between indicants of sexual difficulties and body image self-consciousness during intimacy. Moderate, statistically significant, positive correlations were observed for the body embarrassment subscale across all samples: Data Set A,  $r_{(533)} = .50, p < .001$ ; Data Set B,  $r_{(537)} = .47, p < .001$ ; and Data Set C,  $r_{(207)} = .58, p < .001$ . Moderate, statistically significant, positive correlations also were observed between self-consciousness during intimacy and overall sexual difficulties across all samples: Data Set A,  $r_{(560)} = .26, p < .001$ ; Data Set B,  $r_{(560)} = .22, p < .001$ ; and Data Set C,  $r_{(216)} = .34, p < .001$ .

**5.6.6.2 Masculinity and Sexual Difficulties.** A series of Pearson Product Moment correlations were conducted to assess the relationships between indicants of sexual difficulties and hypermasculinity. Moderate, statistically significant, positive correlations were observed for overall sexual difficulties in two of the samples examined: Data Set B,  $r_{(560)} = .24, p < .001$ ; and Data Set C,  $r_{(216)} = .25, p < .001$ .

**5.6.6.3 Body Image, Masculinity, and Sexual Difficulties.** A series of hierarchical multiple regressions were employed to evaluate how well demographic characteristics (i.e., age and educational attainment – variables found to be associated with sexual difficulties in Study 3), hypermasculinity, and body image self-consciousness during intimacy predicted overall sexual difficulties and sexual difficulties for the six subscales. Demographic variables were controlled for in Step one, hypermasculinity was entered in Step two, and body image self-consciousness was entered in Step three (based on literature reviewed earlier in this chapter).

**Six Sexual Difficulties Subscales.** The overall models for receptive anal difficulties, erectile difficulties, body embarrassment, seminal fluid concerns, and foreskin difficulties were significant in all three data sets. For insertive anal difficulties, the overall model was significant in Data Set A and Data Set B only. For

each data set, a summary of overall model results for indicants of sexual difficulties are presented in Table 5.10.

*Demographic Variables.* In relation to demographic variables, age emerged as a significant predictor for three indicants of sexual difficulties: receptive anal difficulties (Data Set B only); erectile difficulties (across all three data sets); and foreskin difficulties (across all three data sets). Assessment of the standardised beta weights suggests that age was the most significant predictor of erectile difficulties and foreskin difficulties (across all three data sets). Educational attainment was found to be a significant predictor of two indicants of sexual difficulties in Data Set B only; respectively, these indicants were insertive anal difficulties and erectile difficulties.

*Hypermasculinity.* Hypermasculinity emerged as a significant predictor for five of the subscales: receptive anal difficulties (Data Set B only); insertive anal difficulties (Data Set A and B); erectile difficulties (Data Set A and B); seminal fluid concerns (Data Set A only); and foreskin difficulties (Data Set B only). Examination of the standardised beta weights suggests that hypermasculinity was the most significant predictor of insertive anal difficulties (Data Set A and B).

*Body Image Self-Consciousness.* For five of the subscales, body image self-consciousness was found to be a significant predictor: receptive anal difficulties (across all three data sets); erectile difficulties (Data Set A and C); body embarrassment (across all three data sets); seminal fluid concerns (across all three data sets); and foreskin difficulties (Data Set A only). Inspection of the standardised beta weights suggests body image self-consciousness was the most significant predictor of receptive anal difficulties, body embarrassment, and seminal fluid concerns. A detailed account of regression analyses results in relation to receptive anal difficulties, insertive anal difficulties, and erectile difficulties are presented in Table 5.11; regression analyses results for body embarrassment, seminal fluid concerns, and foreskin difficulties are presented in Table 5.12.

*Gay Sexual Difficulties Scale.* The overall model was significant in all data sets: Data Set A [ $F_{(4, 557)} = 15.07, p < .001, R^2 = .10, \text{Adj}R^2 = .09$ ]; Data Set B [ $F_{(4, 557)} = 18.26, p < .001, R^2 = .12, \text{Adj}R^2 = .11$ ]; and Data Set C [ $F_{(4, 213)} = 12.84, p < .001, R^2 = .19, \text{Adj}R^2 = .18$ ]. Overall sexual difficulties were significantly predicted by age (across all three data sets), educational attainment (Data Set B only),

masculinity (across all three data sets), and body image self-consciousness (across all three data sets).

Inspection of the standardised beta weights for overall sexual difficulties suggests that for Data Sets A and C, body image self-consciousness was the most significant predictor, followed by hypermasculinity. For Data Set B, hypermasculinity was the most significant predictor, followed by body image self-consciousness. A detailed account of regression analyses results in relation to overall sexual difficulties are presented in Table 5.13.

### **5.7 Discussion**

The results of this study provide additional strands of evidence in support of the psychometric soundness of the GSDS and its subscales. The original 47-item scale, identified in Study 3, was subjected to confirmatory factor analysis but did not possess adequate fit (Data Set A). However, after the removal of 22 items (21 redundant items, and one item which cross-loaded on two factors), and the addition of four covarying paths, excellent model fit was achieved. This factor structure was confirmed separately in a second sample (Data Set B). The six factors identified were the same as those which emerged in Study 3: Receptive Anal Difficulties, Insertive Anal Difficulties, Erectile Difficulties, Body Embarrassment, Seminal Fluid Concerns, and Foreskin Difficulties. Subscale intercorrelations suggest the domains measure distinct concepts relating to sexual difficulties. It is proposed, therefore, that as well as providing an overall assessment of sexual difficulties, the subscales can be used individually as indicators of each construct.

Results demonstrated that the GSDS and its subscales possess good scale score reliability across all three samples ( $\alpha$ s ranging from .74 to .92). Although possible item redundancy is suggested by the upper bound estimates for Cronbach's alpha for some subscales, corresponding mean inter-item correlations suggested adequate variability of item content (Kline, 1986).

Measurement invariance was examined in a sample of exclusively gay men (subsample of Data Set A) and non-exclusively gay men (Data Set C). Configural and omnibus invariance (with seven covarying paths) was established, suggesting that, for these groups, mean scores on the GSDS and its subscales could be meaningfully compared. Interestingly, non-exclusively gay men evidenced significantly more insertive anal difficulties, erectile difficulties, seminal fluid concerns, foreskin difficulties, and overall sexual difficulties. This finding has

implications for those conducting research with non-heterosexual samples. Often in sexual functioning research, distinctions are not made between these subsamples of sexual minority men (e.g., Damon & Rosser, 2005; Hirshfield et al., 2010; Lau et al., 2008). Future researchers should examine different variations of non-heterosexual identities, and should not assume gay and bisexual men are affected by the same issues. Unfortunately, in the current study, the percentage of those identifying as bisexual was not large enough to be examined separately to those who identified as “more gay than heterosexual.”

Construct validity (convergent validity in particular) was assessed through evaluations of body image self-consciousness and hypermasculinity, with respects to their possible association to sexual difficulties. Relevant findings for each construct will be discussed.

### **5.7.1 Body Image Self-Consciousness**

Those who reported higher levels of body image self-consciousness also reported greater concerns over others evaluating their body and more overall sexual difficulties. The regression output suggested that body image self-consciousness was not associated with insertive anal difficulties, but did account for a small percentage of variance in receptive anal difficulties, insertive anal difficulties, erectile difficulties, body embarrassment, seminal fluid concerns, and overall sexual difficulties.

One possible explanation for these weak associations could stem from high levels of body satisfaction among the participants; mean scores on the measure of body image self-consciousness were below the midpoint. Given the importance placed on physical attractiveness within the gay community, perhaps these participants have invested more time in their appearance (Ryan et al., 2010). Greater investment in one’s appearance could have resulted in a larger proportion of participants attaining their ideal body type, thus, being more satisfied with their body. Considering that body image is a multidimensional construct, future research should assess other domains of body image and their relationship to sexual difficulties, such as the drive for muscularity (Morrison, Morrison, Hopkins, & Rowan, 2004b), the drive for leanness (Smolak & Murnen, 2008), and dissatisfaction with body fat and muscularity (Ryan, Morrison, Roddy, & McCutcheon, 2011).

It is also worth noting that mean scores on the GSDS and subscales were below the midpoint. The association between body image issues and sexual

difficulties may be more prominent in those who report low levels of sexual function. Future research should target men who report greater sexual difficulties. If associations are found to be stronger in that population, clinical interventions aimed at improving body image issues could decrease body image self-consciousness, and in turn increase sexual function for these men (Sanchez & Keifer, 2007).

### **5.7.2 Hypermasculinity**

Those who were higher on hypermasculinity reported more overall sexual difficulties (for Data Set B and Data Set C). In the regression output, however, hypermasculinity did not account for statistically significant variance in body embarrassment and foreskin difficulties. It did account for a small amount of variance in receptive anal difficulties, insertive anal difficulties, erectile difficulties, seminal fluid concerns, and overall sexual difficulties.

As sexual prowess is an important characteristic of masculine identity (Levant et al., 2007), it is possible that participants who adhere to strict masculine standards were less likely to admit to experiencing sexual difficulties. An admission of poor sexual function may directly threaten identification with traditional masculine standards which may account for the insubstantiality of the current associations.

Moreover, the present findings may be a result of low mean scores for the hypermasculinity measure (i.e., similar to previous research using this measure [Bishop et al., in press] mean scores were below the midpoint for all samples). The relevance of masculinity to sexual function may be more salient for those who hold themselves to higher standards of masculinity. Further, the measure of masculinity employed in the current study was limited in its focus: First, only one domain of masculinity was assessed. Given that masculinity is a multidimensional construct (e.g., Connell, 1992; Halkitis, 2001; Levant, 1996; Levant et al., 2007), it is possible that sexual difficulties may be more strongly associated with other expressions of masculinity, such as restricted emotionality, sexual prowess, anti-femininity, and internalized homophobia (Levant et al., 2007). Second, the measure was originally developed using heterosexual samples of men (Burk et al., 2004). Although the version used in the current study was analysed using PCA in a sample of gay men (Bishop et al., in press), it is plausible that the *content* of the items does not represent hypermasculinity as defined by gay men. This possibility is strengthened by the results of Study 2 (Chapter 3) whereby several participants did not view penis

functioning as an essential part of one's masculine identity. Future research would benefit from the development of measures which assess a multitude of masculinity domains pertinent to gay men. The development of such measures would provide a deeper insight into the role of masculinity in the experiences of sexual difficulties for gay men. If strong associations are found, clinical interventions with a focus on challenging a man's internal standards of masculinity could help improve sexual functioning for these men.

### **5.8 Conclusion**

In general, the dimensionalities which emerged in Study 3 were supported through confirmatory factor analyses and invariance analysis. Reliability analyses suggested scores on the GSDS and its subscales, were internally consistent and, sufficiently variable. Modest support was obtained for the construct validity of the GSDS. Specifically, evidence for convergent validity was obtained through associations between sexual difficulties and body image self-consciousness and hypermasculinity, although these relations were weaker than predicted.

## 6. Chapter Six

### General Discussion

#### 6.1 Overview of Thesis

Sexual difficulties have the capacity to impair one's quality of life and can have an adverse impact on one's social and psychological well-being (e.g., Althof, 2002; Laumann et al., 1999). The foundation for the current diagnostic classification system of sexual dysfunctions (DSM-5; APA, 2013) is based on research with heterosexual couples. Previous research has documented large discrepancies in prevalence rates of sexual difficulties between heterosexual men and gay men, with gay men generally reporting higher rates of sexual difficulties (e.g., Hirshfield et al., 2010; Lau et al., 2008; Mao et al., 2009). Additionally, researchers have identified differences in sexual difficulties (e.g., pain during receptive anal sex) between heterosexual and gay men (e.g., Bancroft et al., 2005b; Cove & Boyle, 2002; Damon & Rosser, 2005; Rosser et al., 1997; Rosser et al., 1998).

Sexual difficulties and dysfunctions are primarily assessed and diagnosed through the use of self-report measures. The use of substandard instruments may jeopardise research validity and produce inaccurate findings (DeVellis, 2012). Thus, the purpose of this thesis was to develop a self-report measure of gay men's sexual difficulties (the GSDS), and in doing so, gain a deeper understanding of sexual difficulties among gay men. To complete this objective, expert guidelines for scale development (DeVellis, 2012) and statistical analyses (Fabrigar et al., 1999; Thompson, 2004) were adhered to. The scientific rigour of the statistical analyses used is particularly noteworthy; specifically, the use of both EFA and CFA across multiple large samples strengthens the validity of the present results. Each stage of the scale development process will be summarised.

**6.1.1 Study 1.** In Study 1, a systematic review of previous self-report measures of sexual difficulties was conducted. Seven instruments were assessed with a particular focus on their psychometric properties (i.e., dimensionality, reliability, and validity) and their suitability for use with gay men. The results of this study highlighted the absence of a psychometrically sound measure of male sexual function that could be used with gay men. For example, pain during anal sex which is a sexual difficulty experienced by some gay men (e.g., Damon & Rosser, 2005; Hollows, 2007; Rosser et al., 1997; Rosser et al., 1998) was not assessed by any of the measures, and heterosexist wording was evident throughout. Further, the

measures reviewed were psychometrically deficient (e.g., an overreliance on PCA was evident and the techniques employed within PCA were not optimal).

**6.1.2 Study 2.** In Study 2, a qualitative assessment of conceptualisations of sexual difficulties was conducted. Individual interviews and focus groups were carried out with heterosexual, gay, and bisexual men. Thematic analysis identified two intercorrelated strands of conceptualisations. The first strand related to physical sexual difficulties which included penis function and experiences of pain. In relation to penis function (in terms of erection and ejaculation), participants discussed medicalization, masculine identity, psychological consequences, and coping mechanisms. Pain was discussed in terms of penile pain (psychological and physical impact) and pain during receptive anal sex (acceptance, physical causes, psychological causes, and coping mechanisms). The second strand of conceptualisations focused on psychological and interpersonal difficulties. Included in this category were experiences of low sexual desire, fear of STIs, and penis size concerns. Although some differences were noted between gay and heterosexual participants (i.e., experiences of pain during receptive anal sex, fear of contracting STIs), similarities also were apparent (i.e., experiences of penile pain, penis size concerns). Overall, the results suggested that the current diagnostic system of sexual dysfunction does not cover the full range of sexual difficulties experienced by non-heterosexual men.

**6.1.3 Study 3.** In Study 3, a measure to assess sexual difficulties in gay men (the GSDD) was developed and its dimensionality was examined using guidelines for best practice in EFA (Costello & Osborne, 2005; Fabrigar et al., 1999; Worthington & Whittaker, 2006). The themes which emerged in Study 2, in conjunction with relevant empirical research, informed the generation of an item pool relating to physical and psychological/interpersonal sexual difficulties. The pool of items was subjected to a content validity study; a panel of experts (consisting of experts in the field and potential research participants) reviewed the items on various domains (e.g., item clarity). Their feedback was used to guide revisions to the item pool.

The resultant measure and validation questionnaires were made available online to research participants using SurveyGizmo<sup>®</sup>. The factor structure was examined using EFA and a six-factor solution, with 47 items, was deemed most appropriate. Cronbach's alpha coefficients were good suggesting the GSDD and its subscales were internally consistent. The construct validity of the GSDD was also

investigated through tests of convergent, discriminant, and known-groups validity. In most cases, the results of tests of validity were supportive. For example, individuals who were highly anxious, depressed, or stressed experienced greater sexual difficulties than their healthy counterparts.

**6.1.4 Study 4.** In Study 4, three large samples of men completed an online questionnaire packet which permitted further investigations of the GSDS's psychometric properties using CFA. The original 47-item measure did not possess adequate model fit, however, after the removal of 22 items, and the addition of 4 covarying paths, excellent model fit was achieved. This model fit was confirmed in a second sample. The extent to which the scale's factor structure was equivalent across different samples of exclusively gay men and non-exclusively gay men was examined; configural and omnibus invariance (with seven covarying paths) was demonstrated. Corroborating the results of Study 3, Cronbach's alpha coefficients were good suggesting the GSDS and its subscales were internally consistent. In support of the scales convergent validity, associations between the GSDS and body image self-consciousness and masculinity were examined.

## **6.2 Limitations**

Limitations associated with each study were discussed throughout this thesis. However, several limitations common to all studies will be briefly noted.

First, the potential lack of generalisability must be noted. Given the sensitive nature of this research, those who participated could potentially differ from the un-sampled population. It is possible that participants may have been comparatively comfortable with sexual topics and concerns (i.e., more erotophilic), so the results may be subject to a sampling bias. The issue of comfort may account for why the mean scores for sexual difficulties in studies three and four were below the scale midpoint. Further, data for studies three and four were collected online. Online surveys are advantageous in that participant anonymity is guaranteed, which is particularly relevant for personal subjects such as sexual function (Eysenbach & Wyatt, 2002). As well, Internet surveys have been found to be as representative as non-Internet survey research (Gosling, Vazire, Srivastava, & John, 2004). However, the generalisability of the results may be questioned as the experiences of men who are not proficient computer users and those who do not have access to a computer were not examined (Eysenbach & Wyatt, 2002; Kraut et al., 2004; Poynton, 2005).

## Chapter 6: Discussion

Future research should use traditional methods of data collection (i.e., pen and paper techniques), in conjunction with online surveys.

The second limitation relates to the characteristics of the samples used. The demographic profile of the participants was advantageous as, unlike many psychological studies, a worldwide community sample with a wide age range was used. Although an attempt was made to access an ethnically and culturally diverse sample, the majority of participants in all studies were Caucasian and from Westernised countries. Consequently, it is currently unknown whether the GSDS will evidence comparable psychometric soundness when distributed to men of different ethnic and cultural backgrounds. For example, Laumann et al. (2006) found that individuals from more egalitarian societies reported greater satisfaction with their sex lives compared to those from less egalitarian cultures. In addition, ethnic variations in prevalence rates of sexual difficulties have been reported. Laumann and colleagues (2006), for instance, observed that the prevalence of erectile difficulties was approximately 22% in Caucasian individuals, 24% in Black individuals, and 20% in Hispanic individuals. Similarly, Laumann et al. (1999) reported that Black individuals were more likely and Hispanic persons less likely, to experience sexual difficulties. Future work in this topic should endeavour to include more ethnically and culturally diverse samples.

Third, the only type of reliability assessed was estimates of internal consistency using Cronbach's alpha. The omission of other forms of reliability, such as test-retest reliability, is a limitation of studies three and four. Test-retest reliability assesses the extent of equality between the ratio of true variance to error score variance when scale scores are produced at multiple time points (Furr & Bacharach, 2008). It is recommended that future researchers distribute the scale to a sample of men on two different occasions to investigate the scale's temporal stability. Consequently, an examination of test-retest reliability would provide additional evidence for the psychometric properties of the GSDS.

Fourth, another limiting aspect of the current research is the correlational and cross-sectional nature of the studies conducted. The potential causes and effects of gay men's sexual difficulties cannot be separated. For example, one cannot conclude that sexual difficulties lead to poor levels of psychological well-being; this relationship may be reversed or reciprocal. While some authors consider depression an important factor in the aetiology of sexual difficulties (Jacobs, Fishkin, Cohen,

Goldman, & Mulholland, 1983), others stress the role of sexual difficulties aggravating depressive symptoms (Shabsigh et al., 1998). Unfortunately, the cross-sectional nature of the present research prevented a direct test of the causal relationship between sexual difficulties and associated constructs. Future research would benefit from the inclusion of longitudinal data, which would enable a deeper understanding of the complex relationship between sexual difficulties and various psychological variables.

Fifth, the level of distress associated with each sexual difficulty was not assessed in studies three and four. At the time of scale development, the DSM-5 (APA, 2013), which stipulates the distress associated with sexual dysfunction must be assessed, had not been released. Item development was partially based on classifications described in the DSM-IV-TR (APA, 2000) which does not provide specific guidelines as to how distress should be assessed. To accommodate revisions to the DSM, it is recommended that future researchers using the GSDS provide indicators of distress for each item (for example, “How much distress did this cause you?” Response format: 0 = not applicable, 1 = no distress, 2 = mild distress, 3 = moderate distress, and 4 = severe distress). See Appendix F for the proposed version of the GSDS with distress indicants.

Finally, social desirability (i.e., the tendency for individuals to respond to scale items in a manner that garners social acceptance) was not examined in the current series of studies. The reason for this omission was to ensure the length of the survey was manageable for participants. Additionally, it was believed that the use of anonymous and online methodologies would encourage truthful responses and protect against social desirability. For example, Joinson (1999) found that individuals reported lower social desirability when they were anonymous and when the Internet was used. Moreover, previous research has reported that scores on sexual functioning measures are highly independent of social desirability (e.g., Beck, Bozman, & Qualtrough, 1991; Reynolds et al., 1988; Rosen et al., 1997; Rosen et al., 2004). Nonetheless, it is recommended that future researchers, who employ the GSDS, include a measure of social desirability bias, such as the Social Desirability Scale (Stöber, 2001).

### **6.3 Directions for Future Research**

The results of the current series of studies accentuate the need for additional research in the area of gay men’s sexual difficulties. Several fruitful avenues for

future research will be delineated. Specifically, factor analytic issues, psychological risk factors for sexual difficulties, and physical risk factors for sexual difficulties will be outlined.

**6.3.1 Factor Analysis.** With respect to EFA, poor study designs and suboptimal analytical procedures can lead to inaccurate results. For example, Fabrigar et al. (1999) demonstrated that the use of questionable factor retention criteria, such as the eigenvalue greater than one “rule,” lead to an over-extraction of factors. Consequently, a CFA based on an erroneous EFA will lead to misleading results. Furthermore, in structural equation modelling approaches, such as CFA, the researcher specifies predicted associations between constructs, and the software determines if acceptable model fit can be achieved. With EFA, in contrast, the researcher does not direct the software to a predicted model, which, according to some, indicates a more rigorous process (DeVellis, 2012). If an identical factor structure can be demonstrated using EFA across different samples and occasions, the probability of the resultant model being a recurring idiosyncrasy is small (DeVellis, 2012). Although expert guidelines for conducting EFA (e.g., Costello & Osborne, 2005; Fabrigar et al., 1999) and CFA (Byrne, 2004, 2010; Kline, 2011; Thompson, 2004) were followed, which should increase confidence in the current findings, the use of additional exploratory factor analyses would help strengthen support for the GSDS’s psychometric properties.

**6.3.2 Psychosocial Risk Factors.** Future research should examine potential unique psychosocial risk factors for the development of sexual difficulties among gay men, such as the role of minority stress. The term minority stress is used to describe the mental health consequences of stigmatisation and marginalisation of minority groups (Meyer, 1995). Meyer’s (1995, 2003) minority stress theory explains how societal stressors influence mental health disparities in sexual minorities. As Meyer (2003) stated, a fundamental assumption of this theory is that minority stress is “unique - that is, minority stress is additive to general stressors that are experienced by all people, and therefore, stigmatised people require an adaptation effort above that required of similar others who are not stigmatised” (p. 676). Just as general life stressors are believed to exceed an individual’s ability to cope (Dohrenwend, 2000; Lazarus & Folkman, 1984), stigma creates numerous unique demands (Herek & Garnets, 2007; Major & O’Brien, 2005; Miller & Kaiser, 2001; Pachankis, 2007) that have been shown to be particularly stress-inducing. In

turn, these additional stressors are hypothesised to explain disparities in rates of health problems among sexual minorities (Hatzenbuehler, 2009). Meyer (1995) identifies internalized homonegativity (or internalized homophobia), expectations of stigma, and experiencing prejudicial events (e.g., violence) as sources of minority stress.

**6.3.2.1 Internalized homonegativity.** Internalized homonegativity represents an internal form of stress; it is described as the extent to which gay men internalize the antigay attitudes of the larger heterosexual society (Meyer, 1995, 2003). Internalized homonegativity has been linked to eating disorders (Williamson & Hartley, 1998), risky sexual behavior (Meyer & Dean, 1998), greater substance use (Meyer & Dean, 1998), and suicidality (Remafedi, French, Story, Resnick, & Blum, 1998). In relation to sexual difficulties, Rosser et al. (1997) reported that lower levels of internalized homonegativity and greater comfort with same-sex attraction were associated with fewer sexual difficulties. In research conducted by Lau et al. (2008), feeling uneasy about one's sexual orientation, feeling ashamed of one's sexual orientation, and not fully accepting one's sexual orientation were associated with sexual difficulties. Additionally, Kuyper and Vanwesenbeeck (2011) reported that men who had a negative opinion of their own sexual orientation reported lower levels of sexual satisfaction and those with high levels of internalized homonegativity reported greater sexual difficulties.

**6.3.2.2 Expectation of stigma.** Expectation of stigma is defined as experiences that produce the individual's anticipation that he (or she) will be rejected and discriminated against by others in society because of his or her sexual orientation (Meyer, 1995, 2003). Among sexual minorities, sensitivity to status-based rejection is predictive of both adverse physical (Cole, Kemeny, & Taylor, 1997) and mental (Hatzenbuehler, Nolen-Hoeksema, & Erickson, 2008; Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002) health outcomes. For example, Lau et al. (2008) found that sexual difficulties were positively associated with self-perceived discrimination against MSM and fear about disclosure of one's sexual orientation.

**6.3.2.3 Prejudicial Events.** Experiencing prejudicial events includes verbal and physical violence due to a person's sexual orientation (Hamilton & Mahalik, 2009). This includes experiences of victimisation and discrimination. Experiencing prejudicial events has been related to a number of health outcomes in gay male

populations, including suicidality, depression, substance abuse, body image problems, and workplace problems (Diaz, Ayala, Bein, Henne, & Marin, 2001; Herek, Gillis, & Cogan, 1999; Kimmel & Mahalik, 2005; Meyer, 1995; Waldo, 1999). With respects to sexual functioning, experiences of being discriminated against because of one's MSM status has been associated with sexual difficulties (Lau et al., 2008). Furthermore, Zamboni and Crawford (2007) found that higher levels of sexual difficulties were significantly correlated with more experiences of lifetime discrimination. In their study, mediational analyses suggested that perceived experiences with discrimination based on sexual orientation created stress (as evidenced by psychiatric symptoms) which in turn adversely affected sexual functioning.

These findings (i.e., associations between sexual difficulties and sources of minority stress) must be interpreted with caution however; as is evident from the current series of studies, the measures used in previous sexual functioning literature were suboptimal. Thus, future research should revisit these associations using the instrument developed in the current studies.

**6.3.3 Physical Risk Factors.** Sexual difficulties have been found to relate to a variety of physical health problems such as hypertension, high cholesterol, heart disease, and diabetes, with sexual difficulties being higher among men with these illnesses (Ahn et al., 2007; Hirshfield et al., 2010; Laumann et al., 2007; Quek, Sallam, Ng, & Chua, 2008). As the focus of the current research was on psychosocial correlates of sexual difficulties, the physical health of participants was not assessed. Future research should examine the associations between physical health and the sexual difficulties which emerged in the current studies. One illness which may be of particular relevance to gay men's sexual functioning is HIV. A vast amount of research has been dedicated to the impact of HIV on erectile and ejaculatory function in gay men. The majority of studies have documented that HIV-positive men report more sexual difficulties compared to those who are HIV-negative (e.g., Bancroft et al., 2005a; Catalan & Meadows, 2000; Dupras & Morisset, 1993; Hirshfield et al., 2010; Jones et al., 1994; Lamba, Goldmeier, Maicke, & Scullard, 2004; Mao et al., 2009). Various explanations have been posited for these findings such as the side effects of HIV medication (antiretrovirals), a consequence of HIV infection itself, and psychosocial issues such as depression, performance anxiety, fear of infecting others, HIV-related stress, or feelings of stigmatisation associated with HIV infection

(Asboe et al., 2007; Bancroft et al., 2005a; Catalan & Meadows, 2000; Lamba et al., 2004). One study, however, has reported no differences between HIV-negative and HIV-positive men with regards to sexual function (Zamboni & Crawford, 2007). The authors postulated that their findings may have been influenced by the length of time since participants' HIV diagnosis. HIV-positive participants may have had sufficient time to adjust to their HIV status, which may have weakened the relationship between sexual difficulties and HIV status. It is proposed, therefore, that future researchers, armed with the newly developed measure of sexual difficulties (the GSDS), should thoroughly examine a person's health history and current health status in order to gain a deeper understanding of the complexities of sexual function.

#### **6.4 Overall Implications**

The current findings have implications for sexual dysfunction classifications, as well as for clinical practice and research. Each will be discussed.

**6.4.1 Reformation of Sexual Dysfunction Classifications.** The present findings reinforce the argument made at the beginning of this thesis (Chapter One); the current sexual dysfunction classification system is biased by a heterosexual understanding of sexual function. It is evident that the meaning, contexts, and experiences of sexual difficulties differ for gay/bisexual men in comparison to heterosexual men. In the current studies, several difficulties were identified which are not recognised under the existing classification system of sexual dysfunction; specifically, these were receptive anal difficulties, insertive anal difficulties, body embarrassment, seminal fluid concerns, and foreskin difficulties. Furthermore, several sexual dysfunctions as categorised by the DSM-5 (APA, 2013) did not emerge as sexual difficulties for the present samples of non-heterosexual men. In particular, items relating to sexual desire, premature ejaculation, and delayed ejaculation did not emerge as unique sexual difficulties. Only one item relating to premature ejaculation and one item relating to delayed ejaculation were retained, however, this was in the context of insertive anal difficulties. This is not to say that these are not sexual dysfunctions in their own right, but perhaps the context in which these difficulties occur is more important for gay men. Obviously additional work is needed before any of the sexual difficulties identified in the current research can be classified as dysfunctional. Nonetheless, these findings pose a challenge to how sexual dysfunctions are categorised, suggesting current sexual dysfunction classifications may need to be restructured. Two possible solutions for the

reformation of sexual dysfunction theory are proposed. First, the current diagnostic criteria could be expanded to include difficulties relevant to gay men. However, doing so runs the risk of labelling difficulties as “dysfunctional” when, in effect, they may be common and natural sexual experiences. The second proposal, therefore, is to broaden the current classification system to include the sexual difficulties which emerged in the current research as a separate category to sexual dysfunction. In this way, the difficulties of gay men can be recognised, and treatment aimed at helping those affected can be devised.

**6.4.2 Implications for Clinical Practice and Research.** The current findings pose important challenges for clinical practice and research where sexual difficulties and dysfunctions are primarily assessed through self-report questionnaires. The absence of reliable and valid measures of sexual difficulties suitable for use with sexual minority men has been emphasised. If suboptimal measures of sexual functioning continue to be used, a full understanding of the complexities of gay men’s sexual difficulties will not be achieved. Researchers and clinicians alike need to consider the factors that affect the sexual functioning of gay men. For example, a sex therapist who focuses on a heterosexist understanding of sexual difficulties when conducting sex therapy with a gay man may neglect to consider how other psychosocial factors (e.g., body image, masculine standards) may influence his sexual difficulties. Broadening our understanding of sexual difficulties to include psychological, social, and physical factors pertinent to gay men, will better equip clinicians in providing the appropriate treatment to those affected.

### **6.5 Conclusion**

The current investigations, which represent novel research on gay men’s sexual function, were warranted because previous measurement tools possessed questionable reliability and validity, and were deemed not suitable for use with sexual minority men. A measure of gay men’s sexual difficulties was created (the GSDS), and the scale development process broadened conceptualisations of gay men’s sexual difficulties. Limitations of the current research have been discussed and addressed. Finally, directions for future research have been described, including the examination of potential psychological and physical risk factors for sexual difficulties in gay men. Results from the current studies suggest that the GSDS and its subscales possess excellent psychometric properties, and, consequently, will

prove useful to researchers looking for a brief and easy to administer measure of gay men's sexual difficulties.



### Notes

1. Factors associated with sexual difficulties will be discussed in greater detail in Chapter Four (i.e., anxiety, depression, and stress) and Chapter Five (i.e., body image and masculinity).
2. It should be noted that this term has been criticised in the literature. For instance, Hollows (2007) argued that pain during anal sex may be a consequence of a lack of information, inadequate anoreceptive preparation, or pre-existing medical conditions (e.g., haemorrhoids). Therefore, it may be unwise to label the experience of pain during anal sex a dysfunction.
3. These associations were not examined for those who met the clinical criteria for “anodyspareunia”.
4. The main focus of this thesis is on sexual difficulties pertinent to gay men; however, bisexual men will also be included. Due to small sample sizes of men identifying as bisexual across the current series of studies, the applicability of the current research to this subgroup will be addressed in Chapter 5.
5. Measures published before 1980 were few in number and were psychometrically deficient (Daker-White, 2002).
6. Forty four measures were excluded; the explanation for their exclusion is provided in Table 2.1.
7. The DISF-SR has been reported as having 25 (Derogatis, 1997) and 26 items (Derogatis, 2010).
8. For some unspecified reason, this component was not included as a scale domain.
9. PCA identifies components, not factors as many reported.
10. Heterosexual men were included in this study as, although research suggests there are differences in the experiences of sexual difficulties between heterosexual and gay men (e.g., Cove & Boyle, 2002; Damon & Rosser, 2005; Rosser et al., 1997; Rosser et al., 1998), this assumption has not been examined qualitatively.
11. Research in this field has focused on men’s experience of erectile disorder following prostate cancer. Findings suggest that the norms associated with hegemonic masculinity are implicated in men’s experience of erectile disorder following prostatectomy-induced impotence (Gray, Fitch, Fergus, Mykhalovskiy, & Church, 2002; Oliffe, 2005).

12. The author intended to examine possible ethnic differences, however, due to unequal cell sample sizes, this examination was not possible; approximately 86% ( $n = 961$ ) of the sample was Caucasian.
13. Although numerous researchers have employed PCA for scale development, it is not deemed a true method of factor analysis. Unlike EFA, PCA does not differentiate between unique and shared variance, which can result in inflated values of variance accounted for by components (Costello & Osbourne, 2005). PCA should therefore only be used as an item reduction technique.
14. Skewness values less than  $\pm 1.5$  are acceptable with larger samples (i.e.,  $N > 500$ ) and can be considered to approximate a normal distribution (Forero, Maydeu-Olivares & Gallardo-Pujol, 2009).
15. Two pairs of items had inter-item correlations less than .30: For the RAD factor, item 17 and item 48 ( $r = .26$ ; factor loadings .53 and .65, respectively); and for the IAD factor, item 11 and item 16 ( $r = .28$ ; factor loadings .56 and .61, respectively). However, due to the items' theoretical importance (i.e., the items related to premature and delayed ejaculation, identified in previous research as an important domains of sexual dysfunction [APA, 2000, 2013]) and strong factor loadings, the author decided to retain these items for further investigation through the use of CFA (Chapter Five).

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## Tables

Table 2.1

*List of Excluded Measures*

Scale	Reference	Reason for Exclusion
Arabic Index of Premature Ejaculation	Arafa & Shamloul (2007)	Designed to measure premature ejaculation only.
Center for Marital and Sexual Health Sexual Functioning Questionnaire	Corty, Althof, & Kurit (1996); Glick, McCarron, Althof, Corty, & Wilke (1997)	Not exclusively self report.
Changes in Sexual Functioning Questionnaire	Clayton, McGarvey, & Clavet (1997); Clayton, McGarvey, Clavet, & Piazza (1997)	Male version did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
Chinese Index of Premature Ejaculation	Yuan et al. (2004)	Designed to measure premature ejaculation only.
Derogatis Sexual Functioning Inventory	Derogatis (1978, 1998)	Designed specifically for heterosexual couples.
Erectile Dysfunction Effect on Quality of Life	MacDonagh, Ewings, & Porter (2002)	Designed to measure the influence if erectile dysfunction on quality of life.
Erectile Dysfunction Inventory for Treatment & Satisfaction	Althof et al. (1999)	Designed to assess treatment satisfaction following therapy for erectile dysfunction.
Erectile Function domain of IIEF	Cappelleri, Rosen, Smith, Mishra, & Osterloh (1999)	Designed to measure erectile functioning only.
Erection Quality Scale	Wincze et al. (2004)	Designed to measure quality of erections only.
Golombok Rust Inventory of Sexual Satisfaction	Rust & Golombok (1985, 1986)	Designed for those participating in psychotherapeutic interventions (i.e., sex therapy clients)
Index of Premature Ejaculation	Althof et al. (2006)	Designed to measure premature ejaculation only.
Index of Sexual Satisfaction	Hudson, Harrison, & Crosscup (1981); Hudson (2010)	Designed to measure of the degree of satisfaction in sexual relationships.
Male Function Profile/Impotence Questionnaire	Fineman & Rettinger (1991)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
MSHQ-Ejaculatory Dysfunction	Rosen et al. (2007)	Designed to measure ejaculation difficulties only.

## Tables

Nagoya Sexual Function Questionnaire	Kikuchi et al. (2011)	Designed for schizophrenic patients taking antipsychotics.
New Sexual Satisfaction Scale	Štulhofer, Buško, & Brouillard (2009)	Designed to measure sexual satisfaction.
PROMIS® Sexual Function & Satisfaction	Flynn et al. (2013)	Designed to assess sexual function and satisfaction in cancer patients.
Premature Ejaculation Diagnostic Tool	Symonds et al. (2007)	Designed to measure premature ejaculation only.
Premature Ejaculation Profile	Patrick et al. (2008)	Designed to measure premature ejaculation only.
Psychological Impact of Erectile Dysfunction	Latini et al. (2002)	Designed to measure the psychological impact of erectile dysfunction.
Psychological and Interpersonal Relationship Scale	Swindle, Cameron, Lockhart, & Rosen (2004); Swindle, Cameron, & Rosen (2005)	Assesses broad psychosocial outcomes associated with erectile dysfunction and its treatment.
Psychotropic-Related Sexual Dysfunction Questionnaire	Montejo et al. (2000)	Designed to assess changes in sexual dysfunction associated with antidepressant treatment.
Quality of Erection Questionnaire	Porst et al. (2007)	Designed to measure quality of erections only.
Quality of Life Measure specific to Men with Erectile Difficulties	Wagner, Patrick, McKenna, & Froese (1996)	Designed to measure quality of life.
Quality of Sexual Life Questionnaire	Costa et al. (2003)	Designed to measure quality of life.
Response to Sexual Difficulties Scale	Fallis, Purdon, & Rehman (2013)	Designed to assess ones personal response and ones partners' response to sexual difficulties.
Satisfaction with Sex Life Scale	Neto (2012)	Assess one's global evaluation of his or her sex life.
Self-Esteem and Relationship Questionnaire	Cappelleri et al. (2004)	Designed to measure the impact of erectile dysfunction on men's self-esteem and sexual relationship.
Sexual Aversion Scale	Katz, Gipson, Kearly, & Kriskovich (1989); Katz, Gipson, & Turner (1992)	Designed to assess sexual fear and avoidance typical of sexual aversion disorder.
Sexual Beliefs & Information Questionnaire	Adams et al. (1996)	Designed to measure older people's beliefs and knowledge about sexual intimacy and satisfaction.

Sexual Desire Inventory	Spector, Carey, & Steinberg (1996)	Designed to assess hypoactive sexual desire disorder in men and women.
Sexual Dysfunction Scale	McCabe (1998a, 2010a)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
Sexuality Experience Scales	Cull (1992); Frenken & Vennix (1981)	Designed to assess sexual morality, sexual motivation, psychosexual stimulation, and attraction to “one’s own marriage.”
Sexual Function Scale	McCabe (1998b, 2010b)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
Sexual Health Inventory for Men	Rosen, Cappelleri, Smith, Lipsky, & Pena (1999)	Designed to measure erectile functioning only.
Sexual History Form	Creti et al. (1998, 2010)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
Sexual Interaction Inventory	LoPiccolo & Steger (1974); Reinhardt (1998)	Designed to assess sexual function and satisfaction in heterosexual couple’s relationships only.
Sexual Interaction System Scale	Woody & D’Souza, (1994, 1998, 2010)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
Sexual Life Quality Questionnaire	Woodward, Hass, & Woodward (2002)	Designed to assess sexual quality of life and treatment satisfaction.
Sexual Quality of Life - Male Version	Abraham, Symonds, & Morris (2008)	Assesses the impact of premature ejaculation and erectile difficulties on men’s self-esteem, relationship, and emotional well-being.
Sexual Self-Efficacy Scale: Erectile Functioning	Fichten, Spector, Amsel, Creti, & Libman (1998)	Designed to assess cognitive dimensions of erectile functioning and adjustment in men.
Sexual Symptoms Distress Index	Croog et al. (1986)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).
Treatment Satisfaction Scale	Kubin, Trudeau, Gondek, Seignobos, & Fulg-Meyer (2004)	Designed to measure sexual quality of life; used in treatment outcome studies of male sexual dysfunction.
Watts Sexual Function Questionnaire	Ganz, Rowland, Desmond, Meyerowitz, & Wyatt (1998)	Did not meet the minimum published standards for reliability and validity as identified by Daker-White (2002).

Table 2.2

*Summary of Measures Reviewed*

Measure	Description	Items	Minutes to Complete	Response Format	Time Period	Item Generation	Dimensionality
1. ASEX (McGahuey et al., 2000)	Five domains: 1. Sexual desire (1 item) 2. Sexual arousal (1 item) 3. Erectile function (1 item) 4. Orgasm function (1 item) 5. Sexual satisfaction (1 item)	5	10	Six-point Likert response format with various response options  Example: 1 = extremely easily; 6 = never	Preceding week	Based on a literature review.	No factor analysis performed.
2. BSFI (O'Leary et al., 1995)	Five domains: 1. Sexual drive (2 items) 2. Erection (3 items) 3. Ejaculation (2 items) 4. Perceptions of problems in each domain (3 items) 5. Overall sexual satisfaction (1 item)	11	5	Five-point Likert scales with various response options  Example: 0 = no function; 4 = good function	Preceding 30 days	Based on previous measures, expert and patient reviews, and pilot testing.	Originally developed as a multidimensional measure, but appears to be most suitable as unidimensional measure (Mykletun et al., 2006).
3. BSFQ (Reynolds et al., 1988)	Five domains <sup>†</sup> : 1. Sexual interest (2 items) 2. Sexual activity/performance (10 items) 3. Sexual satisfaction (3 items) 4. Physiological function (3 items) 5. Sexual preference (2 items)	21	15	Likert scales of varying formats and responses  Example: 0 = I have no sexual activity resulting in erection; 6 = never able to regain an erection	Preceding month	Not provided.	Using a PCA, a four-component solution emerged.  Cross-loadings are a concern.

4. DISF-SR (Derogatis, 1997)	Five domains: 1. Sexual cognition/fantasy (5 items) 2. Sexual arousal (5 items) 3. Sexual behavior/experience (5 items) 4. Orgasm (6 items) 5. Sexual drive/relationship (4 items)	25/26	15-20	Likert scales with varying formats and response options  Example: 0 = not at all; 4 = extremely	Preceding 30 days	Based on previous measure (DSFI). No rationale provided for selection of items.	A PCA resulted in six components; not as clear as one would expect.
5. FSHQ (Geisser et al., 1991)	Four domains <sup>††</sup> : 1. Interest and desire for sexual activity 2. Sexual development 3. Current sexual behaviors 4. Satisfaction	20	15-20	Six-point Likert scales with varying response options  Example: 1 = always; 6 = never	Not provided	Based on a literature review.	No factor analysis performed.
6. IIEF (Rosen et al., 1997)	Five domains: 1. Erectile function (6 items) 2. Orgasmic function (2 items) 3. Sexual desire (2 items) 4. Intercourse satisfaction (3 items) 5. Overall satisfaction (2 items)	15	10-15	Five and six-point Likert scales of varying response options  Example: 1 = very low; 5 = very high	Preceding four weeks	Previous research, interviews with male patients and their partners, panel of experts, pilot-testing.	PCA conducted but results ignored.  Cross-loadings are a concern.
7. MSHQ (Rosen et al., 2004)	Three domains: 1. Erectile function (3 items) 2. Ejaculation (7 items) 3. Sexual satisfaction (6 items) - Nine additional items assess sexual activity, time since last sexual encounter, level of and changes in sexual desire, both associated with the sexual dysfunction	25	15-20	Five and six-point Likert scales of varying responses  Example: 0 = none of the time; 5 = all of the time	Preceding four weeks	Based on literature review, expert panel, and patient interviews.	PCA identified three components.

*Note:* ASEX = Arizona Sexual Experience Scale; BSFI = Brief Male Sexual Function Inventory; BSFQ = Brief Sexual Function Questionnaire for Men; DISF-SR = Derogatis Interview for Sexual Functioning-Self Report; FSHQ = Florida Sexual History Questionnaire; IIEF = International Index of Erectile Function; MSHQ = Male Sexual Health Questionnaire.

<sup>†</sup> = an additional item does not load on to any domain; <sup>††</sup> = number of items in each domain is not provided.

Table 2.3

*Reliability and Validity Statistics for Each Measure*

Measure	Internal Consistency (Cronbach's $\alpha$ )	Test-Retest Reliability	Construct Validity			Concurrent Validity
			Convergent	Discriminant	Known-Groups	
1. ASEX (McGahuey et al., 2000)	$\alpha = .91$	One/two week interval For patients: $r = .80$  For controls: $r = .89$	Not demonstrated.	The items on the ASEX did not correlate with depression scores.	Significant differences on total ASEX scores between patients and controls.	Some correlations between items on the ASEX and BSFQ domains and items.  Correlated significantly with a psychiatrist's assessment of sexual dysfunction.
2. BSFI (O'Leary et al., 1995)	Subscales: 1. $\alpha = .92$ 2. $\alpha = .95$ 3. $\alpha = .62$ 4. $\alpha = .81$ 5. $\alpha = \text{NA}$ Total scale: $\alpha = .94$	One week interval Subscales: 1. $r = .90$ 2. $r = .85$ 3. $r = .79$ 4. $r = .87$ 5. $r = \text{NA}$	Not demonstrated.	Not demonstrated.	Differentiated between sexually dysfunctional men and healthy controls.  No difference for ejaculation of drive domains due to methodological problems.	Not demonstrated.
3. BSFQ (Reynolds et al., 1988)	Not assessed.	One month interval $r_s \geq .70$	Not demonstrated.	Not demonstrated.	Differences between a group of depressives and a group of controls.	Correlated weakly with DSFI and a sexual function log.

4. DISF-SR (Derogatis, 1997)	Subscales: 1. $\alpha = .79$ 2. $\alpha = .76$ 3. $\alpha = .77$ 4. $\alpha = .80$ 5. $\alpha = .74$ Total scale: $\alpha$ not calculated	One week interval Subscales: 1. $r = .90$ 2. $r = .82$ 3. $r = .81$ 4. $r = .83$ 5. $r = .80$ Total scale: $r = .86$	Not demonstrated.	Not demonstrated.	Differentiated between sexually dysfunctional and healthy controls.	Not demonstrated.
5. FSHQ (Geisser et al., 1991)	Total scale $\alpha = .90$  Split-half = .86	Not assessed.	Not demonstrated.	Not demonstrated.	Established between community and sexual dysfunctional samples.	Not demonstrated.
6. IIEF (Rosen et al., 1997)	Subscales: 1. $\alpha = .92-.96$ 2. $\alpha = .92-.99$ 3. $\alpha = .77-.91$ 4. $\alpha = .73-.88$ 5. $\alpha = .74-.87$ Total scale: $\alpha s = .73-.95$	Four week interval Subscales: 1. $r = .84$ 2. $r = .64$ 3. $r = .71$ 4. $r = .81$ 5. $r = .77$ Total scale: $r = .82$	Established through comparisons with comparable measures.	Compared scores with scale scores for marital adjustment and social desirability.	Discriminated between erectile dysfunction group and controls across most domains, except sexual desire.	Demonstrated by comparison of patient IIEF scores with independent, blinded clinician ratings of sexual function.
7. MSHQ (Rosen et al., 2004)	Subscales: 1. $\alpha = .90-.93$ 2. $\alpha = .81-.84$ 3. $\alpha = .90$	One week interval Subscales: 1. $r = .87-.94$ 2. $r = .85-.86$ 3. $r = .88$	Significant correlations between depression measure and ejaculation domain (study 1), and satisfaction domain (study 2).	No significant correlation with measures of social desirability, and life satisfaction.	Differentiated between men with sexual dysfunction and healthy controls.	Did not correlate with the IIEF in one study.  In second study, weak, but significant correlations observed.

*Note:* ASEX = Arizona Sexual Experience Scale; BSFI = Brief Male Sexual Function Inventory; BSFQ = Brief Sexual Function Questionnaire for Men; DISF-SR = Derogatis Interview for Sexual Functioning-Self Report; FSHQ = Florida Sexual History Questionnaire; IIEF = International Index of Erectile Function; MSHQ = Male Sexual Health Questionnaire; NA = Not Available.

Tables

Table 3.1

*Demographic Characteristics of Sample (Study 2)*

Demographics	<i>n</i>	Percentage
<b>Sexual Orientation</b>		
Bisexual	5	10
Gay	22	42
Heterosexual	25	48
<b>Relationship Status</b>		
Single	16	31
Casually dating one or more people	1	2
Dating one person exclusively	13	25
Cohabiting	8	15
Engaged or planning to marry	1	2
Married or civil partnership	7	13
Divorced or separated	6	12
<b>Current Occupation</b>		
Student	14	26
Government workers (incl. teachers)	10	19
Sales and Services	10	19
Financial Services	4	8
Health Services	2	4
Trades	2	4
Communication (media)	2	4
Unemployed	4	8
Retired	4	8
<b>Religiosity</b>		
Very religious	2	4
Somewhat religious	8	15
Not very religious	15	29
Not at all religious	27	52

Table 3.2

*Physical Sexual Difficulties: Penis Function Themes*

Theme	Illustrative quotation
Medicalization	“If you can’t get an erection surely a doctor can sort that.” James (22 years, heterosexual, interviewee)
Masculine Identity	“I think erectile dysfunction would be even linked to their sense of self and their sense of masculinity.”(Aaron, 25 years, bisexual, interviewee)
<i>Alternative Masculinity</i>	Well, I suppose somebody that might recognise this [erectile dysfunction] as a biological issue and isn’t an indication of their virility or their manhood.” Pat (34 years, gay, interviewee)
<i>Performance Expectation</i>	“I think for a lot of guys, if <i>not all</i> guys, sexual performance is directly linked to your masculinity, especially if you can’t get an erection, you know, that’s your thing, that’s why you’re here.” Aaron (25 years, bisexual, interviewee)
<i>Restrictive Emotionality</i>	<p>“Men are very backwards in coming forward.” Keith (33 years, heterosexual, interviewee)</p> <p>Partner Involvement: “It’s very rare that a guy will admit that there’s something wrong with them, so it’s all covering up and staying away from the problem.” James (22 years, heterosexual, interviewee)</p> <p>Peer Support: “In fairness, if a lad said this [erectile dysfunction] to his friends, they would probably make fun of him.” Dick (56 years, heterosexual, focus group 3)</p> <p>Internet as a Source of Support: “We’ve much more resources now with internet and all that and so people can look up things and find out things and educate themselves without having to go to anybody.” Henry (33 years, gay, focus group 4)</p>
Psychological Consequences	“Not being able to get an erection would be hugely damaging on self confidence, I think that’s the main thing.” Ted (32 years, bisexual, interviewee)
Coping Mechanisms	“Try and counter act it possibly, by acting more masculine, trying to hide it that way.” (James, 22 years, heterosexual, interviewee)

Table 3.3

*Physical Sexual Difficulties: Pain Themes*

Theme	Illustrative quotation
Penile Pain	“One that I had myself two years ago was that my foreskin was very tight, I had to go and get an operation.” Robert (27 years, heterosexual, interviewee)
<i>Physical Impact</i>	“He couldn’t have anal sex or say couldn’t really do... couldn’t even really masturbate because it was too painful.” Jason (24 years, gay, interviewee)
<i>Psych. Impact</i>	“I think frustration would be a major thing.” Albert (23 years, gay, interviewee)
Pain during Anal Sex	“Well pain during sex, so for a gay man it could be if you’re receiving anal sex, the pain of penetration.” Trevor (23 years, gay, interviewee)
<i>Acceptance</i>	“It [pain] probably comes with the territory. Yeah I don’t, if there is anal sex going to go on, there probably is going to be pain, one comes with the other.” Ted (32 years, bisexual, interviewee)
<i>Physical Determinants</i>	Physique: “I suppose it depends on the size of the penis as well, like if it’s very large it’s gonna [sic] hurt more.” Trevor (23 years, gay, interviewee)  Preparation: “People assume the type of thing you see in porn movies where they just kind of open the door and fling each other against the wall and start fucking, I don’t think in reality it really works like that, there has to be some sort of preparation time.” Ben (35 years, gay, focus group 5)  Medical Conditions: “If there is a lot of anal pain, then that could be medical problem, like colon cancer or something like that, which is something else you need to look at.” Ian (60 years, bisexual, focus group 7)
<i>Psychological Determinants</i>	Sexual Partner: “Usually you can work around it, people are normally quite considerate of it. I think people are a lot more willing if it is going to cause extreme pain to say no.” Aaron (25 years, bisexual, interviewee)  Fear: “They might be feeling a tiny bit of pain but they imagine it as a load cos [sic] they are freaking out.” Scott (18 years, gay, focus group 6)  Sexual Guilt: “If people are brought up to believe that it’s wrong for two men to have sex and they’re constantly struggling with that, and a lot of men are, that the pain might be reinforced that they’re not supposed to be doing it.” Henry (33 years, gay, focus group 4)
<i>Coping</i>	“If it hurts, it hurts... I say find ways to get around it.” Albert (23 years, gay, interviewee)

Table 3.4

*Psychological and Interpersonal Themes*

Theme	Illustrative quotation
Low Sexual Desire	“Other than that I guess sexual appetite as well. There could be a lack of sexual appetite. Or I guess in rare cases where a person may not have any sexual appetite at all. There, there’s no attraction to men or women.” Austin (25 years, heterosexual, interviewee)
<i>Psychological/ Interpersonal Impact</i>	“If it’s just with am someone who’s single then probably doesn’t affect them that much.” Mitch (31 years, heterosexual, interviewee)
	“For the more sexual person, it could be feelings of not being desirable or feeling that you’re not good enough... it could, for the more sexual person, it could lead to anger or resentment at being the person who has to try and get sex all the time could be very frustrating.” Albert (23 years, gay, interviewee)
<i>Societal Influences</i>	“We live in a world which, you know, sex is used to sell things, it sells everything, ya know, subtly or not so subtly. So if you feel that you are out of the loop in that regard it might be bad for your self-esteem”. Sean (25 years, gay, interviewee)
Fear of STIs	“There is that kind of constant fear that you’re gonna [sic] get HIV from somebody.” Aaron (25 years, bisexual, interviewee)
<i>Awareness</i>	“We’re taught that the gay community is, can have AIDS... Well I know heterosexual community can as well but, in my head it’s like a lot more gay people have it or something.” Seamus (43 years, gay, interviewee).
Penis Size Concerns	“Whether it’s big, small, long, ya [sic] know, thick or thin... I just think it is an issue for people always.” Larry (34 years, gay, interviewee)
<i>Competition</i>	“If they see another guy with a bigger cock they feel a little inadequate.” Ben (35 years, gay, focus group 5)
<i>Pornography</i>	“It’s probably porn’s fault ( <i>laughs</i> ), all men in porn have massive penises and most guys compare themselves to them.” Peter (28 years, gay, interviewee)
<i>Psychological Impact</i>	“For some people it can be a horrible hit to self confidence.” Fergal (23 years, gay, interviewee)
<i>Physical Impact</i>	“They’re more worried about what the other person thinks of them... and therefore they can no longer enjoy it [sex] and then they end up with a dysfunction of no orgasms.” Aaron (25 years, bisexual, interviewee)

Tables

Table 4.1

*Demographic Characteristics of Sample (Study 3)*

Demographics	<i>n</i>	Percentage
<b>Ethnicity/Race</b>		
Caucasian	961	85.70
Asian	36	3.20
Black	13	1.20
Hispanic	45	4.00
Multi Race	59	5.30
Other	8	0.70
<b>Level of Education</b>		
Primary school (elementary)	2	0.20
Secondary school (high school)	249	22.20
Certificate	78	7.00
Diploma	165	14.70
Undergraduate degree	381	34.00
Masters degree	182	16.20
Doctoral degree	57	5.10
Decline Response	8	0.70
<b>Current Occupation</b>		
Undergraduate Student	140	12.50
Postgraduate Student	71	6.30
Working full-time	601	53.60
Working part-time	67	6.00
Self-employed	86	7.70
Unemployed and looking for work	81	7.20
Unemployed not looking for work	10	0.90
Retired	39	3.50
Unable to work	26	2.30
Decline response	1	0.10
<b>Religion</b>		
Roman Catholic	184	16.40
Anglican	26	2.30
Lutheran	25	2.20
Presbyterian	8	0.70
Methodist	12	1.10
Baptist	26	2.30
United	10	0.90
Latter Day Saints	8	0.70
Jewish	10	0.90
Buddhist	21	1.90
Atheist	247	22.00
Agnostic	127	11.30
Muslim	7	0.60
Spiritual not religious	277	24.70
Other	91	8.10
Decline Response	43	3.80
<b>Relationship Status</b>		
Single	384	34.20
Casually dating one or more people	101	9.00
Dating one person exclusively	180	16.00
In an open relationship	57	5.10
Cohabiting	198	17.60
Engaged or planning to marry	63	5.60
Married or civil partnership	112	10.00
Separated or divorced	14	1.20
Widowed	11	1.00
Decline response	2	0.20

Table 4.2

*Summary of Skewness and Kurtosis Values for Transformed Variables  
(Study 3)*

Variable	Untransformed				Transformed			
	Skew	SE	Kurtosis	SEK	Skew	SE	Kurtosis	SEK
ED	2.04	.07	5.45	.15	-0.26	.07	3.20	.15
BE	1.17	.07	1.36	.15	-0.86	.07	2.38	.15
SFC	4.49	.07	29.00	.15	-0.79	.07	16.18	.15
FD	1.36	.07	3.73	.15	0.22	.07	-1.41	.15
HADS-D	0.99	.07	1.19	.15	-0.22	.07	-1.09	.15

*Note.* ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; HADS-D = Hospital and Anxiety Depression Scale - Depression Subscale.

Table 4.3

*Factor Loadings for Exploratory Factor Analysis (Study 3)*

Item	Factor					
	RAD	ED	SFC	IAD	FD	BE
When you were penetrated by a guy anally (i.e., bottomed/got fucked), did you cum sooner than you wanted?	<b>.60</b>	-.02	-.01	.06	-.03	-.08
When you were penetrated by a guy anally, did you take longer to cum than you wanted?	<b>.53</b>	.07	-.02	.02	-.01	-.02
When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked) did you experience pain?	<b>.78</b>	.01	.01	.01	.04	-.03
When you engaged in receptive anal intercourse, were you concerned about your arse (ass) being dirty?	<b>.75</b>	-.02	.01	-.01	.00	.08
When you engaged in receptive anal intercourse, were you concerned about your partner's penis being too big?	<b>.70</b>	.01	.02	-.01	.04	-.02
Have you had difficulty engaging in receptive anal intercourse because your partner's penis is too big?	<b>.65</b>	.05	.03	.00	-.01	-.06
Have you had difficulty engaging in receptive anal intercourse (i.e., being the bottom/getting fucked) because your partner's penis is too small?	<b>.60</b>	-.02	-.04	.10	-.03	.03
Were you unable to engage in receptive anal intercourse (i.e., being the bottom/getting fucked) because your arse (ass) was too loose?	<b>.75</b>	.04	-.03	.07	.01	-.03
When you engaged in receptive anal intercourse (i.e., being the bottom/ getting fucked), did you experience testicular pain (i.e., pain in your balls)?	<b>.70</b>	.03	.05	.06	-.05	-.10
When you engaged in receptive anal intercourse (i.e., being the bottom/ getting fucked), were you embarrassed that your ass wasn't toned?	<b>.59</b>	-.03	.04	-.04	-.03	.22
When you've engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed by the amount of hair on your arse (ass)?	<b>.65</b>	-.08	.02	-.07	.08	.06
When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed by the smell of your arse (ass)?	<b>.70</b>	-.02	.01	-.06	-.01	.12
Did you engage in receptive anal intercourse (i.e., being the bottom/getting fucked) when you didn't want to?	<b>.63</b>	-.02	-.05	.01	.01	-.05
When you engaged in sexual activity, were you able to get an erection?	.04	<b>.78</b>	.02	-.04	.02	.03
When you wanked (i.e., jerked off), were you able to get an erection?	-.03	<b>.67</b>	.00	-.10	-.06	-.05
Were you able to get an erection that was hard enough to penetrate a guy anally (i.e., top him/fuck him)?	-.03	<b>.72</b>	-.03	.25	.05	-.03
Were you able to get an erection when receiving oral sex (i.e., a blowjob)?	.05	<b>.83</b>	.00	-.05	.01	.07
When you engaged in sexual activity, were you able to maintain your erection (i.e., keep it up)?	.04	<b>.85</b>	.00	-.06	.02	.04
When you wanked (i.e., jerked off), were you able to maintain your erection (i.e., keep it up)?	-.03	<b>.71</b>	.05	-.10	-.04	-.01
Were you able to maintain an erection that was hard enough to penetrate a guy anally (i.e., top him/fuck him)?	-.03	<b>.75</b>	-.05	.24	.04	-.04
Were you able to maintain an erection while receiving oral sex (i.e., a blowjob)?	.06	<b>.83</b>	.00	-.06	.01	.06
When you engaged in sexual activity, were you concerned about the smell of your ejaculate (i.e., cum, spunk)?	.07	.04	<b>.68</b>	.08	.01	.08
When you engaged in sexual activity, were you concerned about the colour of your ejaculate (i.e., cum, spunk)?	.04	.06	<b>.74</b>	.05	.04	.05

When you engaged in sexual activity, were you concerned about the consistency (i.e., texture) of your ejaculate (i.e., cum, spunk)?	.07	.08	<b>.69</b>	.01	.05	.04
When you wanked (i.e., jerked off), were you concerned about the smell of your ejaculate (i.e., cum, spunk)?	-.06	-.03	<b>.79</b>	.03	-.01	-.05
When you wanked (i.e., jerked off), were you concerned about the colour of your ejaculate (i.e., cum, spunk)?	-.08	-.02	<b>.80</b>	-.02	-.02	-.04
When you wanked (i.e., jerked off), were you concerned about the taste of your ejaculate (i.e., cum, spunk)?	.02	-.07	<b>.64</b>	-.02	-.04	-.03
When you wanked (i.e., jerked off), were you concerned about the consistency (i.e., texture) of your ejaculate (i.e., cum, spunk)?	-.05	-.02	<b>.77</b>	-.05	.01	-.03
When you penetrated a guy anally (i.e., topped him/fucked him), did you cum sooner than you wanted?	.07	-.07	.06	<b>.56</b>	-.01	.01
When you penetrated a guy anally (i.e., topped him/fucked him), did you take longer to cum than you wanted?	-.01	.10	-.01	<b>.61</b>	-.03	-.00
When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy) did you experience pain?	.01	.03	.01	<b>.70</b>	.12	.00
When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you concerned about your partner's arse (ass) being dirty?	.05	.02	.06	<b>.68</b>	.04	.07
When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you concerned about your penis being too big?	-.06	-.04	-.01	<b>.73</b>	-.04	.03
Have you had difficulty engaging in insertive anal intercourse (i.e., being the top/fucking a guy) because your penis is too big?	-.01	-.08	-.05	<b>.67</b>	.02	.00
Were you unable to engage in insertive anal intercourse (i.e., being the top/fucking a guy) because your partner's arse (ass) was too tight?	.01	-.04	-.04	<b>.72</b>	.01	.02
Were you unable to engage in insertive anal intercourse (i.e., being the top/fucking a guy) because your partner's arse (ass) was too loose?	-.01	.01	.06	<b>.80</b>	-.00	-.01
When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), did you experience testicular pain (i.e., pain in your balls)?	.06	.03	.06	<b>.70</b>	-.01	-.03
Did you engage in insertive anal intercourse (i.e., being the top/fucking a guy) when you didn't want to?	.06	.03	-.03	<b>.58</b>	-.03	-.00
When you engaged in sexual activity, did you experience any difficulties because your foreskin is too tight?	-.00	.00	-.02	-.03	<b>.89</b>	.02
When you wanked (i.e., jerked off), did you experience any difficulties because your foreskin is too tight?	-.01	-.04	-.02	-.07	<b>.88</b>	-.02
When you engaged in sexual activity, did you experience any difficulties because your penis has too much foreskin?	.00	.02	.02	.02	<b>.90</b>	-.01
Have you had any difficulties putting on a condom because your penis has too much foreskin?	.00	.02	.02	.07	<b>.81</b>	-.01
When you engaged in sexual activity, were you embarrassed that your partner thought your body is too fat?	-.04	.01	-.06	.04	-.02	<b>.78</b>
When you engaged in sexual activity, were you embarrassed that your partner thought your body isn't muscular?	-.01	-.01	.02	.04	-.01	<b>.81</b>
When you engaged in sexual activity, were you embarrassed that your partner thought your stomach isn't toned?	-.00	-.02	-.02	.03	-.01	<b>.89</b>
Were you concerned that your partner thought your body is sexually unappealing?	-.04	-.01	-.01	.03	-.02	<b>.89</b>
When you engaged in sexual activity were you embarrassed that your partner thought your penis is too small?	.08	.09	.07	-.07	.04	<b>.56</b>
Eigenvalues	9.03	4.94	4.10	3.93	3.23	3.09
% of variance	19.21	10.51	8.66	8.36	6.88	6.57

Note. RAD = Receptive Anal Difficulties (13 items); ED = Erectile Difficulties (8 items); SFC = Seminal Fluid Concerns (7 items); IAD = Insertive Anal Difficulties (10 items); FD = Foreskin Difficulties (4 items);

BE = Body Embarrassment (5 items).

Factor loadings > .50 appear in bold

Tables

Table 4.4

*Descriptive Statistics for all Measures in Study 3*

Variable	<i>M</i>	<i>SD</i>	$\alpha$	95% CI	Possible Range	Attained Range	Skew	Kurtosis
RAD	16.59	9.47	.90	.89-.91	0-65	0-44	-0.49	-0.61
IAD	11.92	7.02	.87	.86-.88	0-50	0-29	-0.50	-0.76
ED	11.35	5.80	.92	.91-.92	0-40	0-40	2.04	5.45
BE	8.17	4.70	.89	.88-.90	0-25	0-25	1.17	1.63
SFC	7.84	3.12	.88	.87-.89	0-35	0-35	4.49	29.00
FD	2.44	2.74	.92	.91-.93	0-20	0-20	1.37	3.73
GSDS	58.30	18.76	.90	.89-.90	0-235	3-130	-0.24	-0.24
IIEF-EF	24.24	9.41	.87	.86-.88	2-35	2-35	-0.41	-1.14
IIEF-OF	7.99	2.86	.71 <sup>†</sup>	-	0-10	0-10	-0.59	1.67
IIEF-SD	7.97	1.74	.72 <sup>†</sup>	-	2-10	2-10	-0.79	0.40
IIEF-IS	8.23	5.41	.91	.90-.91	0-16	0-16	-0.49	-1.22
IIEF-OS	5.78	3.03	.69 <sup>†</sup>	-	0-10	0-10	-0.18	-1.27
IIEF	54.21	17.84	.91	.90-.92	4-81	4-81	-0.41	-0.68
HADS-A	7.74	4.04	.84	.82-.85	0-21	0-21	0.33	-0.17
HADS-D	4.48	3.44	.80	.78-.81	0-21	0-21	0.99	1.19
PPS-4	6.64	3.18	.81	.79-.83	0-16	0-16	0.21	-0.26

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale; IIEF = International Index of Erectile Function; IIEF-EF = Erectile Functioning Domain; IIEF-OF = Orgasmic Function Domain; IIEF-SD = Sexual Desire Domain; IIEF-IS = Intercourse Satisfaction Domain; IIEF-OS = Overall Satisfaction Domain; IIEF-Total = Total IIEF Score; HADS-A = Hospital and Anxiety Depression Scale - Anxiety Subscale; HADS-D = Hospital and Anxiety Depression Scale - Depression Subscale; PPS-4 = Perceived Stress Scale - Four.

<sup>†</sup> = correlation coefficient; Cronbach's alpha does not make conceptual sense for two-item measures, hence, correlation coefficients were calculated (Streiner, 2003).

Table 4.5

*Summary of Intercorrelations for Subscales and Total Scale Score (Study 3)*

	RAD	IAD	ED	BE	SFC	FD
RAD						
IAD	.34 <sup>***</sup>					
ED	.25 <sup>***</sup>	.25 <sup>***</sup>				
BE	.26 <sup>***</sup>	.18 <sup>***</sup>	.25 <sup>***</sup>			
SFC	.20 <sup>***</sup>	.18 <sup>***</sup>	.18 <sup>***</sup>	.18 <sup>**</sup>		
FD	.11 <sup>***</sup>	.12 <sup>***</sup>	.08 <sup>**</sup>	.05	.12 <sup>**</sup>	
GSDS-5	.41 <sup>***</sup>	.33 <sup>***</sup>	.33 <sup>***</sup>	.30 <sup>***</sup>	.26 <sup>***</sup>	.13 <sup>***</sup>

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS-5 = Gay Sexual Difficulties Scale - Five Subscales (for example, for the RAD correlation, RAD items were excluded from GSDS-Total to avoid inflated results).

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.6

*Summary of Correlations for Measures used in Study 3*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age																	
2. Relig. Behavior	.13***																
3. RAD	-.25***	-.05															
4. IAD	-.10*	-.03	.27***														
5. ED	.18***	.02	.12***	.12***													
6. BE	-.08**	-.01	.20***	.07*	.05												
7. SFC	-.13***	-.03	.21***	.15***	.17***	.04											
8. FD	-.13***	-.08	.13**	.12**	.24***	.01	.19***										
9. GSDS	-.17***	-.07*	.74***	.54***	.57***	.36***	.40***	.38***									
10. IIEF-EF	-.14***	-.05	-.06*	<b>-.42***</b>	-.17***	-.12***	-.01	-.10*	-.18***								
11. IIEF-OF	-.08**	.02	-.11**	-.02	<b>-.29***</b>	-.08*	-.06	-.09*	-.20***	.44***							
12. IIEF-SD	-.08**	.05	-.01	-.09**	-.10**	-.02	-.01	-.02	-.03	.28***	.27***						
13. IIEF-IS	-.09**	-.04	-.01	-.06	-.21***	-.16***	-.03	-.07	-.08*	.72***	.39***	.24***					
14. IIEF-OS	.01	.03	-.05	-.12***	-.04	-.21***	-.01	-.07	-.06*	.48***	.35***	.19***	.62***				
15. IIEF-T	-.12***	-.03	-.08**	<b>-.35***</b>	-.10**	-.15***	-.02	-.10*	-.19***	.92***	.59***	.39***	.87***	.68***			
16. HADS-A	-.18***	-.01	.20***	.09**	.02	.19***	.06*	.05	.16***	-.12***	-.14***	-.06*	-.14***	-.22***	-.17***		
17. HADS-D	-.03	-.01	.13***	.05	.12***	.20***	.08**	-.01	.15***	-.22***	-.16***	-.17***	-.22***	-.32***	-.28***	.62***	
18. PPS-4	-.14***	-.01	.20***	.07*	.05	.22***	.05	.01	.16***	-.14***	-.18***	-.10**	-.16***	-.28***	-.21***	.64***	.63***

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale; IIEF = International Index of Erectile Function; IIEF-EF = Erectile Functioning Domain; IIEF-OF = Orgasmic Function Domain; IIEF-SD = Sexual Desire Domain; IIEF-IS = Intercourse Satisfaction Domain; IIEF-OS = Overall Satisfaction Domain; IIEF-Total = Total IIEF Score; HADS-A = Hospital and Anxiety Depression Scale - Anxiety Subscale; HADS-D = Hospital and Anxiety Depression Scale - Depression Subscale; PPS-4 = Perceived Stress Scale - Four.

Correlations of practical significance (i.e., 5% of variance accounted for) appear in bold.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.7

*Summary of Levene's Tests and Post Hoc Tests for all ANOVAs*

	Levene's Test		Post hoc Test
	<i>F</i>	<i>p</i>	
Age			
RAD	2.45	.062	Tukey's HSD
IAD	5.15	.002**	Dunnett C
ED	12.04	<.001***	Dunnett C
BE	4.63	.003**	Dunnett C
SFC	8.49	<.001***	Dunnett C
FD	3.88	.009**	Dunnett C
GSDS	4.11	.007**	Dunnett C

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.8

*Means, Standard Deviations, and ANOVAs for Sexual Difficulties Indicators according to Age Group (Study 3)*

Measure	18-29			30-39			40-49			50+			<i>df</i>	<i>F</i>	<i>p</i>	$\eta^2$
	<i>n</i>	<i>M</i>	<i>SD</i>													
RAD	434	20.57	7.59	282	17.42	8.20	188	16.81	8.18	112	14.38	8.14	3, 1012	24.25	<.001*	.07
IAD	417	13.80	5.91	272	14.01	4.94	182	13.57	6.01	109	11.31	6.23	3, 358.67	6.44	<.001*	.02
ED	469	10.61	4.60	305	10.65	4.57	208	12.42	7.03	137	14.05	8.25	3, 413.62	8.23	<.001*	.03
BE	457	8.85	4.94	299	8.57	4.21	200	8.19	4.33	124	7.05	3.55	3, 429.74	5.52	.001*	.02
SFC	468	8.17	3.18	305	7.96	3.45	209	7.55	2.84	133	7.23	1.70	3, 430.86	7.50	<.001*	.02
FD	290	4.91	2.57	159	4.29	1.51	93	4.24	1.54	58	3.82	1.07	3, 204.52	6.85	<.001*	.03
GSDS	469	61.73	17.45	306	57.66	17.86	210	56.30	20.73	137	51.09	19.38	3, 430.03	12.99	<.001*	.03

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*Bonferroni correction of  $p < .0125$  used to control for Type I error.

Table 4.9

*Means, Standard Deviations, and T-Tests for Sexual Difficulties Indicators according to Educational Attainment (Study 3)*

Measure	College Graduates			Non-Graduates			<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	561	17.46	8.15	450	19.41	8.07	1009	3.80	<.001 <sup>***</sup>	0.239
IAD	544	13.66	5.67	430	13.68	5.78	972	0.06	.952	0.004
ED	619	11.39	5.59	493	11.39	6.01	1110	-0.74	.462	0.044
BE	602	8.39	4.30	472	8.64	4.77	1073	0.49	.623	0.029
SFC	615	7.68	2.69	492	8.16	3.48	945.16	2.51	.012 <sup>*</sup>	0.163
FD	325	4.47	1.75	272	4.67	2.45	595	0.18	.858	0.015
GSDS	620	57.26	17.83	494	59.92	19.48	1112	2.38	.018 <sup>*</sup>	0.143

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.10

*Means, Standard Deviations, and ANOVAs for Sexual Difficulties Indicators according to Religious Group (Study 3)*

Measure	Christian			Other			Agnostic/Atheist			Spiritual			<i>df</i>	<i>F</i>	<i>p</i>	$\eta^2$
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	277	18.09	8.29	116	19.23	7.92	329	18.41	8.16	252	17.97	8.47	3, 970	0.70	.551	.002
IAD	256	13.56	6.18	116	14.19	5.45	333	13.69	5.40	241	13.38	5.95	3, 942	0.54	.658	.002
ED	297	11.65	6.07	128	12.21	6.07	374	10.88	4.82	277	11.53	6.40	3, 1072	2.15	.092	.006
BE	287	7.70	3.70	124	9.10	4.88	365	8.56	4.51	262	9.03	4.96	3, 426.04	4.36	.005*	.012
SFC	296	7.87	3.32	129	8.37	4.30	373	7.75	2.39	277	7.92	3.01	3, 572	0.18	.912	.001
FD	166	4.60	2.11	69	4.61	2.50	220	4.63	2.17	121	4.46	1.86	3, 1071	0.96	.409	.003
GSDS	299	57.67	18.75	129	61.75	19.59	374	58.06	18.13	277	57.93	19.50	3, 1075	1.60	.187	.004

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*Bonferroni correction of  $p < .0125$  used to control for Type I error.

Table 4.11

*Means, Standard Deviations, and T-Tests for Sexual Difficulties Indicators according to Religious Importance (Study 3)*

Measure	Unimportant - Very Unimportant			Important - Very Important			<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	180	17.23	7.68	179	18.05	9.19	345.40	-0.92	.357	0.10
IAD	176	13.86	5.48	169	14.31	5.70	343	-0.75	.456	0.08
ED	203	11.93	5.94	202	11.77	6.05	403	-0.07	.945	0.01
BE	195	7.77	3.85	195	8.85	4.61	378.17	-2.30	.022*	0.24
SFC	200	7.48	2.19	201	8.28	4.25	362.86	-2.40	.017*	0.25
FD	98	4.36	1.42	100	4.34	2.01	196	0.75	.454	0.11
GSDS	203	56.15	18.96	203	58.66	19.99	403	-1.30	.195	0.13

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.12

*Means, Standard Deviations, and T-Tests for Sexual Difficulties Indicators and Anxiety (Study 3)*

Measure	Healthy			Anxious			<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	507	16.91	7.65	509	19.72	8.50	1014	-5.55	<.001 <sup>***</sup>	0.35
IAD	494	13.26	5.39	486	14.05	6.03	962.46	-2.18	.030 <sup>*</sup>	0.14
ED	559	11.23	5.73	560	11.53	5.83	1117	-0.95	.345	0.06
BE	541	7.61	3.66	539	9.37	5.07	1037.70	-5.90	<.001 <sup>***</sup>	0.37
SFC	557	7.70	2.92	558	8.07	3.21	1109.69	-2.43	.015 <sup>*</sup>	0.15
FD	304	4.44	1.67	296	4.69	2.45	543.58	-0.24	.807	0.02
GSDS	561	55.53	17.15	561	61.08	19.87	1096.51	-5.00	<.001 <sup>***</sup>	0.30

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.13

*Means, Standard Deviations, and T-Tests for Sexual Difficulties Indicators and Depression (Study 3)*

Measure	Healthy			Depressed			<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	192	15.74	6.55	186	19.70	9.35	330.51	-4.75	<.001 <sup>***</sup>	0.52
IAD	185	13.02	5.01	175	14.76	5.98	340.06	-2.98	.003 <sup>**</sup>	0.32
ED	213	10.28	4.80	212	12.47	6.65	401.27	-3.38	.001 <sup>**</sup>	0.34
BE	204	6.81	3.11	197	9.73	5.62	341.67	-5.84	<.001 <sup>***</sup>	0.63
SFC	212	7.30	1.34	210	8.18	3.66	308.52	-2.71	.007 <sup>**</sup>	0.31
FD	117	4.45	1.59	110	4.66	2.31	184.72	0.13	.900	0.02
GSDS	213	52.01	14.73	213	61.21	23.18	359.23	-4.89	<.001 <sup>***</sup>	0.52

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4.14

*Means, Standard Deviations, and T-Tests for Sexual Difficulties Indicators and Stress (Study 3)*

Measure	Healthy			Stressed			<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	267	16.51	7.54	269	20.51	8.84	534	-5.63	<.001 <sup>***</sup>	0.49
IAD	261	13.30	5.29	246	14.42	5.95	505	-2.23	.026 <sup>*</sup>	0.20
ED	295	11.24	6.10	295	11.94	6.36	588	-1.38	.169	0.11
BE	287	7.28	3.23	279	10.00	5.58	510.08	-6.33	<.001 <sup>***</sup>	0.56
SFC	294	7.72	3.12	294	8.20	3.54	548.35	-1.75	.081	0.15
FD	151	4.51	2.24	165	4.73	2.40	314	-0.29	.776	0.03
GSDS	296	54.85	17.08	296	62.72	21.29	563.50	-4.96	<.001 <sup>***</sup>	0.42

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5.1

*Demographic Characteristics of Samples (Study 4)*

Demographics	Data Set A		Data Set B		Data Set C	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Ethnicity/Race						
Caucasian	485	86.30	477	84.90	335	74.40
Asian	22	3.90	11	2.00	37	8.20
Black	8	1.40	4	0.70	11	2.40
Hispanic	21	3.70	42	7.50	30	6.70
Multi Race	21	3.70	24	4.30	33	7.30
Other	5	0.90	4	0.70	4	0.90
Level of Education						
Primary school (elementary)	2	0.40	2	0.40	8	1.80
Secondary school (high)	132	23.50	104	18.50	118	26.20
Certificate	32	5.70	52	9.30	22	4.90
Diploma	76	13.50	93	16.50	55	12.20
Undergraduate degree	179	31.90	180	32.00	166	36.90
Masters degree	112	19.90	105	18.70	63	14.00
Doctoral degree	24	4.30	21	3.70	15	3.30
Decline Response	5	0.90	5	0.90	3	0.70
Current Occupation						
Undergraduate Student	76	13.40	75	13.30	92	20.40
Postgraduate Student	33	5.90	37	6.60	30	6.70
Working full-time	296	52.70	293	52.10	205	45.60
Working part-time	28	5.00	31	5.50	26	5.80
Self-employed	65	11.60	49	8.70	34	7.60
Unemployed	44	7.80	43	7.80	36	8.00
Retired	10	1.80	17	3.00	16	3.60
Unable to work	9	1.60	16	2.80	9	2.00
Decline response	1	0.20	1	0.20	2	0.40
Religion						
Roman Catholic	86	15.30	98	17.40	96	21.30
Anglican	23	4.10	21	3.70	12	2.70
Lutheran	7	1.20	9	1.60	5	1.10
Presbyterian	4	0.70	6	1.10	12	2.70
Methodist	16	2.80	15	2.70	8	1.80
Baptist	12	2.10	10	1.80	11	2.40
United	7	1.20	6	1.10	4	0.90
LDS	1	0.20	1	0.20	4	0.90
Jewish	13	2.30	7	1.20	7	1.60
Buddhist	9	1.60	5	0.90	13	2.90
Atheist	122	21.70	121	21.50	56	12.40
Agnostic	69	12.30	59	10.50	44	9.80
Muslim	3	0.50	2	0.40	9	2.00
Spiritual not religious	121	21.50	120	21.40	84	18.70
Other	49	8.70	55	9.80	55	12.20
Decline Response	20	3.60	27	4.80	30	6.70
Relationship Status						
Single	195	34.70	188	33.50	190	42.20
Casually dating one or more	47	8.40	42	7.50	57	12.70
Dating one person	97	17.30	101	18.00	59	13.10
In an open relationship	35	6.20	35	6.20	29	6.40
Cohabiting	88	15.70	91	16.20	40	8.90
Engaged/planning to marry	31	5.50	41	7.30	18	4.00
Married/civil partnership	66	11.70	55	9.80	43	9.60
Separated/divorced	2	0.40	6	1.10	8	1.70
Widowed	1	0.20	1	0.20	5	1.10
Decline response	0	0.00	2	0.40	1	0.20

Tables

Table 5.2

*Summary of Skewness and Kurtosis Values for Transformed Variables, Stratified by Data Set (Study 4)*

Variable	Untransformed				Transformed			
	Skew	SE	Kurtosis	SEK	Skew	SE	Kurtosis	SEK
<b>Data Set A</b>								
ED	2.07	.10	6.24	.21	0.48	.10	1.56	.21
BE	1.06	.10	0.79	.21	-0.58	.10	1.06	.21
SFC	2.91	.10	13.92	.21	0.14	.10	5.53	.21
FD	1.23	.10	3.33	.21	0.23	.10	-1.50	.21
<b>Data Set B</b>								
ED	1.95	.10	5.75	.21	0.11	.10	1.98	.21
BE	1.24	.10	1.26	.21	-0.45	.10	1.09	.21
SFC	2.66	.10	15.09	.21	-0.18	.10	5.88	.21
FD	1.48	.10	4.50	.21	-0.16	.10	0.91	.21
R-ADMI	1.05	.10	2.29	.21	-0.98	.10	1.27	.21
<b>Data Set C</b>								
ED	2.17	.12	7.12	.23	0.56	.12	1.43	.23
BE	1.28	.12	1.46	.23	-0.41	.12	1.31	.23
SFC	2.48	.12	8.73	.23	0.32	.12	3.06	.23
FD	1.02	.12	1.65	.23	-0.03	.12	-1.37	.23

*Note.* ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; R-ADMI = Revised Auburn Differential Masculinity Inventory.

Table 5.3

*Fit statistics of Original and Revised versions of the Gay Sexual Difficulties Scale, Data Set A*

Model	$\chi^2(df)$	$Q$	RMSEA (90% CI)	CFI	AIC	$\Delta$ AIC	$\chi^2 diff$	
							$\chi^2(df)$	$p$
GSDS – 47	5002.54 (1019)	4.91	.083 (.081-.086)	.76	5220.54	-	-	-
GSDS – 25	1002.11 (260)	3.85	.071 (.067-.076)	.90	1132.11	4108.83	-	-
Covary 7 & 8	959.50 (259)	3.71	.069 (.065-.074)	.90	1091.50	40.61	42.61 (1)	<.001
Covary 19 & 20	898.19 (258)	3.48	.067 (.062-.071)	.91	1032.19	59.31	61.31 (1)	<.001
Covary 25 & 29	775.29 (257)	3.02	.060 (.055-.065)	.93	911.29	120.90	122.90 (1)	<.001
Covary 44 & 45	496.96 (256)	1.94	.041 (.036-.046)	.97	634.96	276.33	278.33 (1)	<.001
Final Model (4 covariances)	496.96 (256)	1.94	.041 (.036-.046)	.97	634.96	497.15	503.15 (4)	<.001

*Note.* GSDS = Gay Sexual Difficulties Scale;  $\chi^2$  = Chi-Square;  $df$  = Degrees of Freedom;  $Q$  = Chi-Square/ $df$  Ratio; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; AIC = Akaike's Information Criteria;  $\Delta$  AIC = Delta Akaike's Information Criteria;  $\chi^2 diff$  = Chi-Square Difference Test.

Table 5.4

*Summary of Intercorrelations for the Gay Sexual Difficulties Subscales and Total Scale, Stratified by Data Set (Study 4)*

	RAD	IAD	ED	BE	SFC	FD
Data Set A						
RAD						
IAD	.32**					
ED	.12**	.01				
BE	.30**	.25**	.22**			
SFC	.33**	.26**	.25**	.38**		
FD	.11*	.16**	.05	.09*	.13**	
GSDS-5	.39***	.31***	.17***	.38***	.43***	.16***
Data Set B						
RAD						
IAD	.29***					
ED	.19***	.12**				
BE	.19***	.16***	.26***			
SFC	.26***	.24***	.20***	.29***		
FD	.12**	.10*	.04	.09*	.16***	
GSDS-5	.34***	.27***	.24***	.30***	.37***	.14***
Data Set C						
RAD						
IAD	.42***					
ED	.10*	.12*				
BE	.13**	.05	.16**			
SFC	.15**	.21***	.13**	.11*		
FD	.15**	.11*	.04	.09	.06	
GSDS-5	.33***	.32***	.18***	.16***	.23***	.17***

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS-5 = Gay Sexual Difficulties Scale - Five Subscales (for example, for the RAD correlation, RAD items were excluded from GSDS-Total to avoid inflated results);

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5.5

*Fit statistics of Original and Revised versions of the Gay Sexual Difficulties Scale, Data Set B*

Model	$\chi^2(df)$	$Q$	RMSEA (90% CI)	CFI	AIC	$\Delta$ AIC	$\chi^2 diff$	
							$\chi^2(df)$	$p$
GSDS – 25	1029.31 (260)	3.96	.073 (.068-.077)	.89	1159.31	-	-	-
Covary 7 & 8	970.41 (259)	3.75	.070 (.065-.075)	.90	1102.41	56.90	58.90 (1)	<.001
Covary 19 & 20	897.43 (258)	3.48	.066 (.062-.071)	.91	1031.43	70.98	72.98 (1)	<.001
Covary 25 & 29	749.32 (257)	2.92	.058 (.054-.063)	.93	885.32	146.11	148.11 (1)	<.001
Covary 44 & 45	470.95 (256)	1.84	.039 (.033-.044)	.97	608.95	276.37	278.37 (1)	<.001
Final Model (4 covariances)	470.95 (256)	1.84	.039 (.033-.044)	.97	608.95	550.36	558.36 (4)	<.001

*Note.* GSDS = Gay Sexual Difficulties Scale;  $\chi^2$  = Chi-Square;  $df$  = Degrees of Freedom;  $Q$  = Chi-Square/ $df$  Ratio; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; AIC = Akaike's Information Criteria;  $\Delta$  AIC = Delta Akaike's Information Criteria;  $\chi^2 diff$  = Chi-Square Difference Test.

Table 5.6

*Descriptive Statistics for all Measures in Study 4*

Variable	<i>M</i>	<i>SD</i>	$\alpha$	95% CI	Possible Range	Attained Range	Skew	Kurtosis
Data Set A								
RAD	7.13	4.48	.81	.78-.83	0-25	0-25	-0.15	-0.25
IAD	6.40	4.19	.77	.74-.80	0-25	0-21	-0.19	-0.51
ED	5.52	2.32	.82	.79-.84	0-20	0-19	2.07	6.24
BE	6.96	4.32	.90	.89-.92	0-20	0-20	1.06	0.79
SFC	3.43	1.70	.83	.80-.85	0-15	0-15	2.91	13.92
FD	2.40	2.68	.91	.89-.92	0-20	0-18	1.23	3.33
GSDS	32.28	11.27	.82	.80-.84	0-125	0-73	-0.03	0.91
M-BISC	43.49	12.95	.90	.89-.91	17-85	17-85	0.17	-0.40
R-ADMI	16.19	9.75	.81	.78-.83	0-76	0-49	0.71	0.34
Data Set B								
RAD	6.87	4.47	.82	.79-.84	0-25	0-25	-0.23	-0.54
IAD	6.46	3.90	.74	.70-.77	0-25	0-25	-0.22	0.13
ED	5.66	2.52	.82	.79-.84	0-20	0-20	1.95	5.75
BE	6.71	4.21	.92	.91-.93	0-20	0-20	1.24	1.26
SFC	3.31	1.45	.76	.73-.79	0-15	0-15	2.66	15.09
FD	2.45	2.76	.91	.90-.92	0-20	0-20	1.48	4.50
GSDS	31.46	10.62	.82	.79-.84	0-125	1-109	0.50	5.45
M-BISC	42.09	13.00	.90	.89-.91	17-85	17-78	0.34	-0.39
R-ADMI	16.71	10.45	.83	.81-.85	0-76	0-76	1.05	2.29
Data Set C								
RAD	7.38	4.85	.82	.79-.85	0-25	0-21	-0.19	-0.66
IAD	6.92	4.17	.75	.71-.79	0-25	0-18	-0.42	-0.65
ED	5.79	2.56	.84	.81-.86	0-20	0-20	2.17	7.12
BE	7.03	4.18	.89	.88-.91	0-20	0-20	1.28	1.46
SFC	3.82	2.18	.82	.79-.85	0-15	0-15	2.48	8.73
FD	2.99	2.92	.87	.85-.89	0-20	0-17	1.02	1.65
GSDS	33.94	10.93	.80	.77-.82	0-125	3-69	0.08	0.64
M-BISC	42.66	12.49	.90	.87-.91	17-85	17-81	0.38	-0.40
R-ADMI	19.04	11.35	.84	.81-.87	0-76	0-71	0.77	1.21

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale; M-BISC = Male Body Image Self-Consciousness Scale; R-ADMI = Revised Auburn Differential Masculinity Inventory.

Table 5.7

*Invariance Analysis Stratified by Data Set*

Model	$\chi^2(df)$	$Q$	RMSEA (90% CI)	CFI	AIC	$\Delta$ AIC	$\chi^2 diff$	
							$\chi^2(df)$	$p$
Baseline Model								
Data Set A	498.96 (256)	1.94	.041 (.036-.046)	.97	634.96	-	-	-
Data Set C	480.41 (256)	1.88	.044 (.038-.050)	.96	618.41	16.55	-	-
Configural Invariance	949.83 (512)	1.86	.031 (.028-.034)	.96	1225.83	16.55	450.87(256)	< .001
Omnibus Invariance								
4 Covariances	1270.18 (579)	2.19	.036 (.034-.039)	.94	1412.18	186.35	320.35(67)	< .001
7 Covariances	1200.05 (576)	2.08	.035 (.032-.037)	.95	1348.05	64.13	70.13(3)	< .001

*Note.*  $\chi^2$  = Chi-Square;  $df$  = Degrees of Freedom;  $Q$  = Chi-Square/ $df$  Ratio; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; AIC = Akaike's Information Criteria;  $\Delta$  AIC = Delta Akaike's Information Criteria;  $\chi^2 diff$  = Chi-Square Difference Test.

Table 5.8

*Means, Standard Deviations, and T-Tests for Sexual Difficulties Indicators according to Sexual Orientation (Study 4)*

Measure	Exclusively Gay			Non-Exclusively Gay			<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
RAD	366	8.88	3.10	353	9.41	3.29	717	-2.23	.026*	0.17
IAD	355	8.03	2.87	365	8.53	2.77	718	-2.39	.017*	0.18
ED	449	5.49	2.38	449	5.80	2.55	896	-2.19	.029*	0.15
BE	429	7.15	4.00	436	7.25	4.05	863	-0.59	.553	0.04
SFC	434	3.59	1.58	432	3.98	2.07	821.49	-3.49	.001**	0.24
FD	245	4.49	1.88	283	4.76	2.27	526	-0.96	.336	0.08
GSDS	450	31.76	11.02	450	33.94	10.93	898	-2.98	.003**	0.20

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5.9

*Summary of Correlations for Measures used in Study 4, Stratified by Data Set*

	RAD	IAD	ED	BE	SFC	FD	GSDS	M-BISC
Data Set A								
M-BISC	.19***	.05	.07	<b>.50**</b>	.13**	.13*	<b>.26***</b>	
R-ADMI	.08	.16**	.09*	.03	.11*	.09	.16***	-.01
Data Set B								
M-BISC	.20	.05	.04	<b>.47***</b>	.12**	.02	<b>.22***</b>	
R-ADMI	.16**	.14**	.11**	.11**	.06	.13*	<b>.24***</b>	.08
Data Set C								
M-BISC	.20**	.11	.17**	<b>.58***</b>	.20**	.14	<b>.34***</b>	
R-ADMI	.12	.14	-.01	-.01	.05	.08	<b>.25***</b>	.00

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties; GSDS = Gay Sexual Difficulties Scale; M-BISC = Male Body Image Self-Consciousness Scale; R-ADMI = Revised Auburn Differential Masculinity Inventory. Correlations of practical significance (i.e., 5% of variance accounted for) appear in bold. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Tables

Table 5.10

*Summary of Overall Regression Models for Six Sexual Difficulties  
Subscales, Stratified by Data Set*

Variable	$R^2$	$Adj. R^2$	df	$F$	$p$
<b>Data Set A</b>					
RAD	.05	.04	4, 453	6.25	< .001 <sup>***</sup>
IAD	.04	.03	4, 437	4.01	.003 <sup>**</sup>
ED	.06	.06	4, 556	9.49	< .001 <sup>***</sup>
BE	.26	.25	4, 530	46.38	< .001 <sup>***</sup>
SFC	.03	.02	4, 534	5.04	.003 <sup>**</sup>
FF	.06	.05	4, 292	4.72	.001 <sup>**</sup>
<b>Data Set B</b>					
RAD	.10	.09	4, 440	12.09	< .001 <sup>***</sup>
IAD	.04	.03	4, 457	4.98	.001 <sup>**</sup>
ED	.06	.05	4, 555	8.17	< .001 <sup>***</sup>
BE	.22	.22	4, 534	38.62	< .001 <sup>***</sup>
SFC	.02	.02	4, 535	3.13	.015 <sup>*</sup>
FF	.03	.02	4, 305	2.41	.049 <sup>*</sup>
<b>Data Set C</b>					
RAD	.06	.04	4, 157	2.71	.032 <sup>*</sup>
IAD	.05	.03	4, 167	2.26	.065
ED	.08	.07	4, 213	4.86	.001 <sup>**</sup>
BE	.34	.33	4, 204	26.19	< .001 <sup>***</sup>
SFC	.05	.03	4, 202	2.49	.044 <sup>*</sup>
FF	.10	.07	4, 141	3.53	.009 <sup>**</sup>

*Note.* RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties; BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5.11

*Hierarchical Multiple Regression Analyses for Receptive Anal Difficulties, Insertive Anal Difficulties, and Erectile Difficulties*

Predictors	RAD						IAD						ED					
	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change
Data Set A																		
(1) Demographics				.02	.02	4.43*				.01	.00	1.10				.04	.04	12.10***
Age	-0.03	.01	-.09				0.02	.01	.06				0.00	.00	.23***			
Education	-0.06	.09	-.03				-0.13	.08	-.07				0.00	.00	-.00			
(2) Masculinity	0.03	.02	.08	.03	.02	2.79	0.05	.01	.17***	.03	.03	12.59***	0.00	.00	.10*	.05	.05	6.05*
(3) Body Image	0.04	.01	.17***	.05	.04	13.02***	0.01	.01	.05	.04	.03	1.20	0.00	.00	.11**	.06	.06	7.14**
Data Set B																		
(1) Demographics				.06	.06	10.29***				.02	.02	5.51**				.04	.03	10.17***
Age	-0.06	.01	-.21***				-0.02	.01	-.07				0.00	.00	.21***			
Education	0.07	.09	.04				-0.20	.09	-.11*				-0.01	.01	-.09*			
(2) Masculinity	0.04	.01	.14**	.08	.07	10.36**	0.04	.01	.13**	.04	.04	8.67**	0.00	.00	.12**	.05	.05	9.05**
(3) Body Image	0.04	.01	.14**	.10	.09	9.72**	0.00	.01	.01	.04	.03	0.09	0.00	.00	.07	.06	.05	2.90
Data Set C																		
(1) Demographics				.02	.01	1.48				.03	.02	2.82				.04	.03	4.48*
Age	-0.03	.02	-.09				-0.03	.02	-.14				0.00	.00	.23**			
Education	-0.04	.16	-.02				-0.06	.13	-.03				0.00	.01	.02			
(2) Masculinity	0.03	.02	.11	.03	.01	1.68	0.03	.02	.11	.05	.03	2.17	0.00	.00	.02	.04	.03	0.06
(3) Body Image	0.05	.02	.18*	.06	.04	6.02*	0.02	.02	.09	.05	.03	1.18	0.00	.00	.21**	.08	.07	10.06**

Note. RAD = Receptive Anal Difficulties; IAD = Insertive Anal Difficulties; ED = Erectile Difficulties.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5.12

*Hierarchical Multiple Regression Analyses for Body Embarrassment, Seminal Fluid Concerns, and Foreskin Difficulties*

Predictors	BE						SFC						FD					
	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change
Data Set A																		
(1) Demographics				.01	.01	3.20*				.00	.00	0.23*				.04	.04	6.70**
Age	0.00	.00	.05				0.00	.00	.04				0.00	.00	-.18**			
Education	-0.01	.01	-.07				0.00	.00	-.03				0.01	.01	.10			
(2) Masculinity	0.00	.00	.03	.01	.01	0.42	0.00	.00	.11*	.01	.01	6.17*	0.00	.00	.07	.05	.04	0.92
(3) Body Image	0.01	.00	.51***	.26	.25	176.45***	0.00	.00	.13**	.03	.02	9.41**	0.00	.00	.12*	.06	.05	4.39*
Data Set B																		
(1) Demographics				.01	.01	3.31*				.01	.01	2.70				.02	.01	2.41*
Age	0.00	.00	-.01				0.00	.00	-.05				0.00	.00	-.12*			
Education	0.00	.01	.01				0.00	.00	-.05				0.01	.01	.03			
(2) Masculinity	0.00	.00	.07	.02	.02	5.95*	0.00	.00	.05	.01	.01	1.55	0.00	.00	.12*	.03	.02	4.77*
(3) Body Image	0.01	.00	.46***	.22	.22	138.60***	0.00	.00	.10*	.02	.02	5.49*	0.00	.00	-.01	.03	.02	0.04
Data Set C																		
(1) Demographics				.01	.00	1.15				.01	-.01	0.53				.10	.07	6.36**
Age	0.00	.00	-.03				0.00	.00	-.04				0.00	.00	-.24**			
Education	0.00	.01	.03				0.01	.01	.06				-0.01	.01	-.06			
(2) Masculinity	0.00	.00	-.00	.01	-.00	0.08	0.00	.00	.05	.01	-.01	0.46	0.00	.00	.04	.10	.06	0.26
(3) Body Image	0.01	.00	.58***	.34	.33	101.23***	0.00	.00	.20**	.05	.03	8.40**	0.00	.00	.09	.10	.07	1.19

Note. BE = Body Embarrassment; SFC = Seminal Fluid Concerns; FD = Foreskin Difficulties.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 5.13

*Hierarchical Multiple Regression Analyses for the Gay Sexual Difficulties Scale, Stratified by Data Set*

Predictors	GSDS					
	B	SE	$\beta$	$R^2$	Adj. $R^2$	$F$ change
<b>Data Set A</b>						
(1) Demographics				.02	.02	5.15**
Age	-0.07	.04	-.08*			
Education	-0.28	.28	-.04			
(2) Masculinity	0.18	.05	.16***	.04	.04	13.14***
(3) Body Image	0.21	.04	.24***	.10	.09	35.18***
Total Adj. $R^2$					.15	
<b>Data Set B</b>						
(1) Demographics				.03	.03	9.12***
Age	-0.08	.04	-.09*			
Education	-0.60	.29	-.09*			
(2) Masculinity	0.22	.04	.22***	.09	.08	32.72***
(3) Body Image	0.15	.03	.18***	.12	.11	19.38***
Total Adj. $R^2$					.22	
<b>Data Set C</b>						
(1) Demographics				.05	.04	5.24**
Age	-0.13	.05	-.15*			
Education	-0.12	.43	-.02			
(2) Masculinity	0.23	.06	.24***	.10	.09	12.07***
(3) Body Image	0.28	.06	.32***	.19	.18	25.64***
Total Adj. $R^2$					.31	

Note. GSDS = Gay Sexual Difficulties Scale.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



Figures

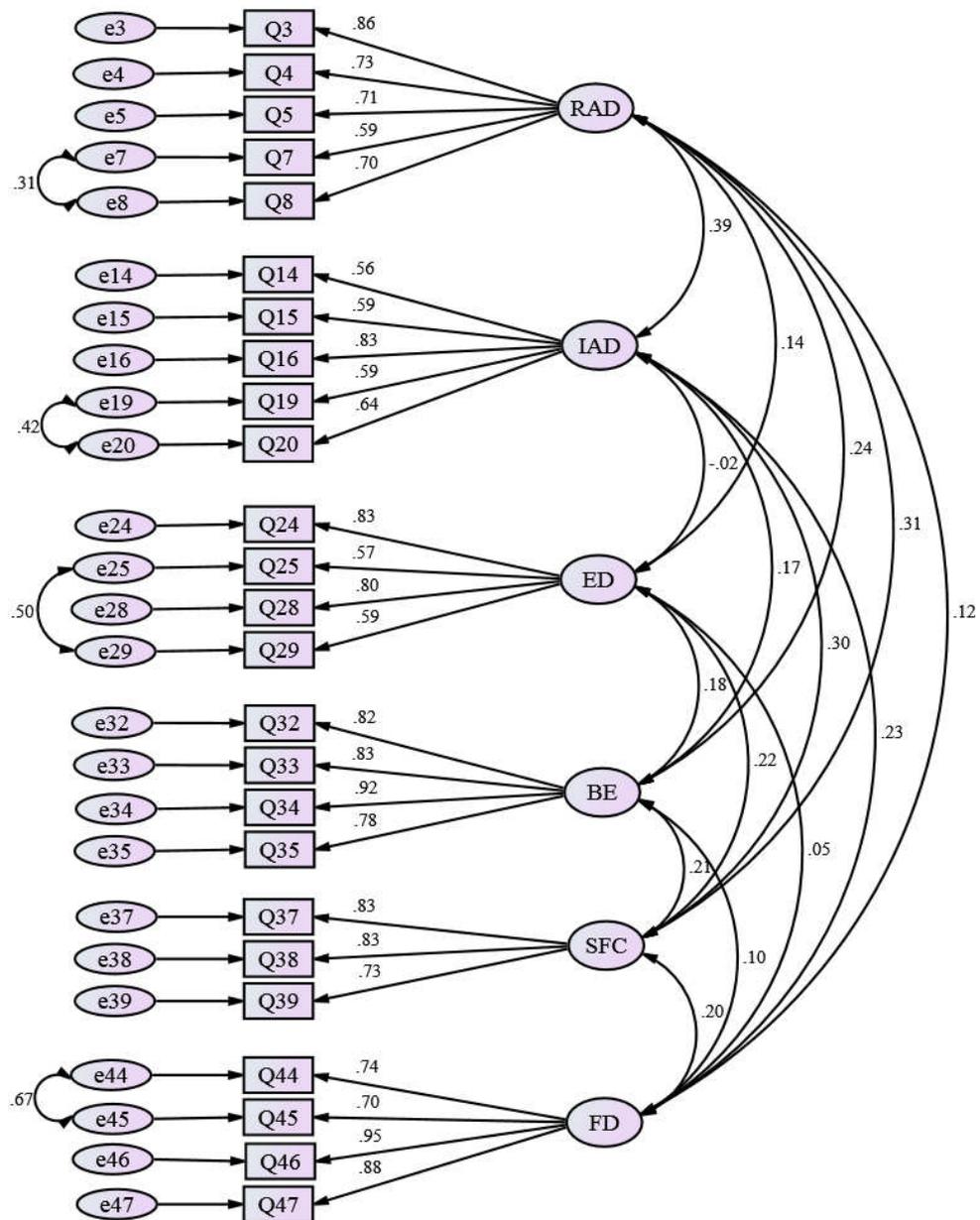


Figure 5.1

Path Diagram for Confirmatory Factor Analysis of the Gay Sexual Difficulties Scale; Data Set A

Figures

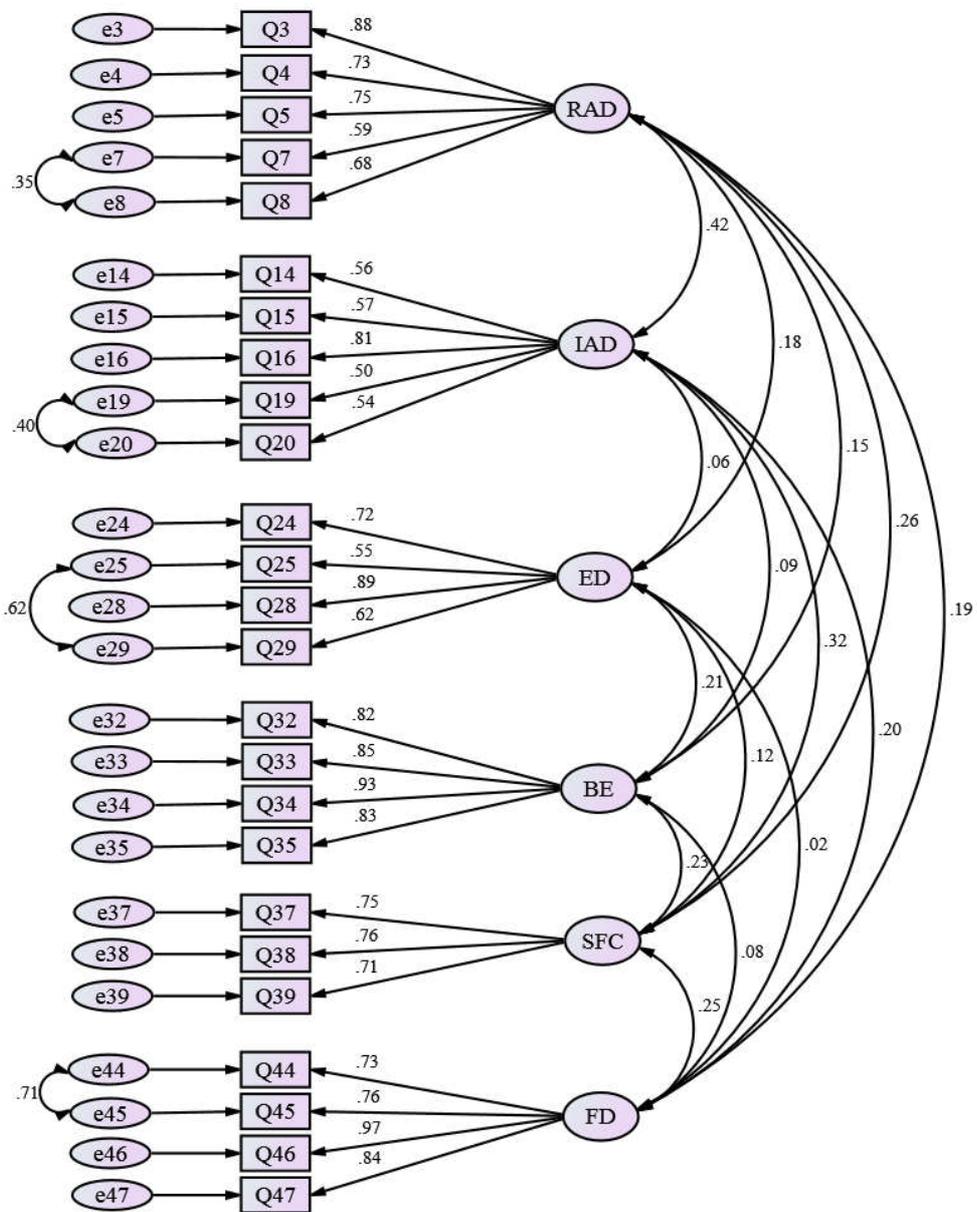


Figure 5.2

Path Diagram for Confirmatory Factor Analysis of the Gay Sexual Difficulties Scale; Data Set B

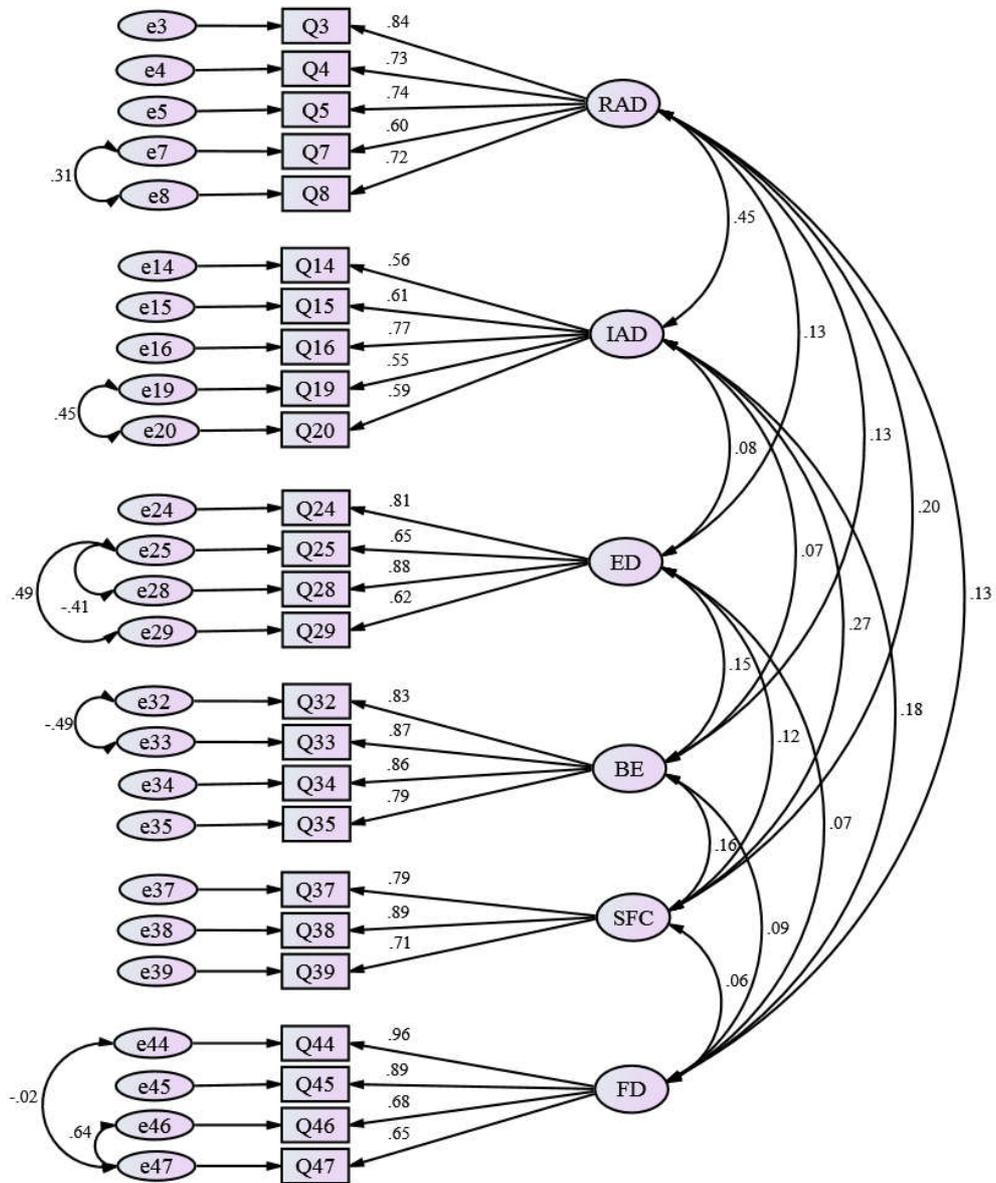


Figure 5.3

Path Diagram for Omnibus Invariance Analysis of the Gay Sexual Difficulties Scale; Data Sets A and C



## Appendices

### Appendix A

Interview Schedule: Set of Guiding Questions and Probes Used to Facilitate Discussion of Relevant Topics (Study 2)

#### **Global Experiences:**

1. What are the sexual dysfunctions that men may experience?
2. What sort of effects do you think this specific dysfunction may have on men?
3. How do you think men cope with this sexual dysfunction and its effects?
  - Same questions for sexual difficulties.

#### **Others' Experiences:**

4. Do you know anyone who has ever experienced a sexual dysfunction? If yes, what was the nature of the dysfunction?
5. What effects did the dysfunction have on the man: physically, psychologically, relationally, etc.?
6. How did the individual in question cope with the effects of the dysfunction?
7. What characteristics or qualities might help a man deal with a sexual dysfunction?
  - Same questions for sexual difficulties.

#### **Personal Experiences:**

8. Have you ever experienced a sexual dysfunction?
9. How do you determine whether a sexual matter is a problem or a dysfunction?
10. What impact did this sexual dysfunction have on your life?
11. How did you deal with this dysfunction and its effects?
  - Same questions for sexual difficulties.

**Appendix B**

Demographic Questions

1. What age are you?  Years

2. How would you describe your sexual orientation?

- Exclusively heterosexual
- More heterosexual than gay
- Bisexual
- More gay than heterosexual
- Exclusively gay
- Other
- Decline Response

3. What ethnicity are you?

- Asian
- Black
- Caucasian (white)
- Hispanic
- Multi Race
- Other
- Decline Response

4. What is your nationality?

5. What religion are you?

- Roman Catholic
- Anglican
- Lutheran
- Presbyterian
- Methodist
- Baptist
- United
- LDS
- Jewish
- Buddhist
- Muslim
- Atheist
- Agnostic
- Spiritual, not religious
- Other
- Decline Response

7. What is your current occupational status?

- Undergraduate student
- Postgraduate student
- Working full-time
- Working part-time
- Self-employed
- Unemployed, looking for work
- Unemployed, not looking for work
- Retired
- Unable to work
- Decline Response

8. What is the highest level of education you have completed?

- Primary school (elementary school)
- Secondary school (high school)
- Some college
- Undergraduate degree
- Masters degree
- Doctoral degree
- Decline Response

9. What is your current relationship status?

- Not dating anyone currently
- Casually dating one or more people
- Dating one person exclusively
- In an open relationship
- Living with romantic partner
- Engaged or planning to marry
- Married/ civil partnership
- Separated
- Divorced
- Widowed
- Decline Response

**Appendix C**  
Physical Item Pool

1. When you engaged in sexual activity, were you able to GET an erection?
2. When you wanked (i.e., jerked off), were you able to GET an erection?
3. Were you able to GET an erection that was hard enough to penetrate a guy anally (i.e., top him/fuck him)?
4. Were you able to GET an erection when receiving oral sex (i.e., a blowjob)?
5. When you engaged in sexual activity, were you able to MAINTAIN your erection (i.e., keep it up)?
6. When you wanked (i.e., jerked off), were you able to MAINTAIN your erection (i.e., keep it up)?
7. Were you able to MAINTAIN an erection that was hard enough to penetrate a guy anally (i.e., top him/fuck him)?
8. Were you able to MAINTAIN an erection while receiving oral sex (i.e., a blowjob)?
9. When you engaged in sexual activity, did you cum (i.e., ejaculate) sooner than you wanted?
10. When you wanked (i.e., jerked off), did you cum (i.e., ejaculate) sooner than you wanted?
11. When you penetrated a guy anally (i.e., topped him/fucked him), did you cum sooner than you wanted?
12. When you were penetrated by a guy anally (i.e., bottomed/got fucked), did you cum sooner than you wanted?
13. When you received oral sex (i.e., a blowjob), did you cum (i.e., ejaculate) sooner than you wanted?
14. When you engaged in sexual activity, did you take longer to cum (i.e., ejaculate) than you wanted?
15. When you wanked (i.e., jerked off), did you take longer to cum (i.e., ejaculate) than you wanted?
16. When you penetrated a guy anally (i.e., topped him/fucked him), did you take longer to cum than you wanted?

17. When you were penetrated by a guy anally (i.e., bottomed/got fucked), did you take longer to cum than you wanted?
18. When you received oral sex (i.e., a blowjob), did you take longer to cum (i.e., ejaculate) than you wanted?
19. When you engaged in sexual activity, were you able to cum (i.e., ejaculate)?
20. When you wanked (i.e., jerked off), were you able to cum (i.e., ejaculate)?
21. When you penetrated a guy anally (i.e., topped him/fucked him), were you able to cum (i.e., ejaculate)?
22. When you were penetrated by a guy anally (i.e., bottomed/got fucked), were you able to cum (i.e., ejaculate)?
23. When you received oral sex (i.e., a blowjob), were you able to cum?
24. When you engaged in sexual activity, were you concerned about the amount of ejaculate (i.e., cum, spunk) you produced?
25. When you engaged in sexual activity, were you concerned about the smell of your ejaculate (i.e., cum, spunk)?
26. When you engaged in sexual activity, were you concerned about the colour of your ejaculate (i.e., cum, spunk)?
27. When you engaged in sexual activity, were you concerned about the taste of your ejaculate (i.e., cum, spunk)?
28. When you engaged in sexual activity, were you concerned about the consistency (i.e., texture) of your ejaculate (i.e., cum, spunk)?
29. When you wanked (i.e., jerked off), were you concerned about the amount of ejaculate (i.e., cum, spunk) you produced?
30. When you wanked (i.e., jerked off), were you concerned about the smell of your ejaculate (i.e., cum, spunk)?
31. When you wanked (i.e., jerked off), were you concerned about the colour of your ejaculate (i.e., cum, spunk)?
32. When you wanked (i.e., jerked off), were you concerned about the taste of your ejaculate (i.e., cum, spunk)?
33. When you wanked (i.e., jerked off), were you concerned about the consistency (i.e., texture) of your ejaculate (i.e., cum, spunk)?

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34. When you performed oral sex on your partner (i.e., gave him a blowjob), did you find the taste of his ejaculate to be unpleasant?
35. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked) did you experience pain?
36. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy) did you experience pain?
37. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you concerned about your arse (ass) being dirty?
38. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you concerned about your partner's arse (ass) being dirty?
39. When you were rimmed (i.e., your partner's tongue was in your arse [ass]), were you concerned about your arse (ass) being dirty?
40. When you rimmed a guy (i.e., had your tongue in your partner's arse [ass]), were you concerned about his arse (ass) being dirty?
41. When you fingered a guy's arse (ass), were you concerned about his arse (ass) being dirty?
42. When you had your arse (ass) fingered, were you concerned about your arse (ass) being dirty?
43. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you concerned about your partner's penis being too big?
44. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you concerned about your penis being too big?
45. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you concerned about your penis being too small?
46. Have you had difficulty engaging in insertive anal intercourse (i.e., being the top/fucking a guy) because your penis is too big?
47. Have you had difficulty engaging in insertive anal intercourse (i.e., being the top/fucking a guy) because your penis is too small?
48. Have you had difficulty engaging in receptive anal intercourse (i.e., being the bottom/getting fucked) because your partner's penis is too big?

49. Have you had difficulty engaging in receptive anal intercourse (i.e., being the bottom/getting fucked) because your partner's penis is too small?
50. Have you had difficulty performing oral sex on your partner (i.e., giving him a blowjob) because his penis is too big?
51. Have you had difficulty performing oral sex on your partner (i.e., giving him a blowjob) because his penis is too small?
52. Were you unable to engage in receptive anal intercourse (i.e., being the bottom/getting fucked) because your arse (ass) was too tight?
53. Were you unable to engage in insertive anal intercourse (i.e., being the top/fucking a guy) because your partner's arse (ass) was too tight?
54. Were you unable to engage in receptive anal intercourse (i.e., being the bottom/getting fucked) because your arse (ass) was too loose?
55. Were you unable to engage in insertive anal intercourse (i.e., being the top/fucking a guy) because your partner's arse (ass) was too loose?
56. When you engaged in sexual activity, did you experience any difficulties because your foreskin is too tight? (Note: Foreskin is the fold of skin that covers the head of the penis)
57. When you wanked (i.e., jerked off), did you experience any difficulties because your foreskin is too tight?
58. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), did you experience any difficulties because your foreskin is too tight?
59. When you received oral sex (i.e., a blowjob), did you experience any difficulties because your foreskin is too tight?
60. When you engaged in sexual activity, did you experience any difficulties because your penis has too much foreskin?
61. Have you had any difficulties putting on a condom because your penis has too much foreskin?
62. When you engaged in sexual activity, did you experience any difficulties because you are circumcised?
63. When you wanked (i.e., jerked off), did you experience any difficulties because you are circumcised?

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64. When you received oral sex (i.e., a blowjob), did you experience any difficulties because you are circumcised?
65. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), did you experience any difficulties because you are circumcised?
66. Have you had difficulties putting on a condom because you are circumcised?
67. When you engaged in sexual activity, did you experience testicular pain (i.e., pain in your balls)?
68. When you wanked (i.e., jerked off), did you experience testicular pain (i.e., pain in your balls)?
69. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), did you experience testicular pain (i.e., pain in your balls)?
70. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), did you experience testicular pain (i.e., pain in your balls)?

Note: The response format is: Not Applicable, Never, Once or Twice, Several Times, Most of the Time, All of the Time. For items 1, 2, 3, 4, 5, 6, 7, 8, 19, 20, 21, 22, and 23 the response format reverse scored.

## Appendix D

### Psychological Item Pool

1. When you engaged in sexual activity, were you embarrassed that your body is too thin?
2. When you engaged in sexual activity, were you embarrassed that your partner thought your body is too thin?
3. When you engaged in sexual activity, were you embarrassed that your body is too fat?
4. When you engaged in sexual activity, were you embarrassed that your partner thought your body is too fat?
5. When you engaged in sexual activity, were you embarrassed that your body wasn't muscular?
6. When you engaged in sexual activity, were you embarrassed that your partner thought your body isn't muscular?
7. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed that your ass wasn't toned?
8. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed that your partner thought your ass wasn't toned?
9. When you engaged in sexual activity, were you embarrassed that your stomach wasn't toned?
10. When you engaged in sexual activity, were you embarrassed that your partner thought your stomach wasn't toned?
11. Were you concerned that your body is sexually unappealing?
12. Were you concerned that your partner thought your body is sexually unappealing?
13. When you engaged in sexual activity were you embarrassed that your penis is too small?
14. When you engaged in sexual activity were you embarrassed that your partner thought your penis is too small?
15. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you embarrassed that your penis is too small?

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16. When you engaged in insertive anal intercourse (i.e., being the top/fucking a guy), were you embarrassed that your partner thought your penis is too small?
17. When you received oral sex (i.e., a blowjob) were you embarrassed that your penis is too small?
18. When you received oral sex (i.e., a blowjob) were you embarrassed that your partner thought your penis is too small?
19. When you engaged in sexual activity, were you embarrassed by the shape of your penis?
20. When you engaged in sexual activity, were you embarrassed your partner would not like the shape of your penis?
21. When you engaged in sexual activity, were you embarrassed because your penis is curved rather than straight?
22. When you engaged in sexual activity, were you embarrassed your partner thought your penis is curved rather than straight?
23. When you engaged in sexual activity, were you embarrassed by the colour of your penis?
24. When you engaged in sexual activity, were you embarrassed your partner thought your penis is a funny colour?
25. When you engaged in sexual activity, were you embarrassed by the amount of hair on your body?
26. When you engaged in sexual activity, were you embarrassed by what your partner thought about the amount of hair on your body?
27. When you've engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed by the amount of hair on your ass?
28. When you've engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed by what your partner thought about the amount of hair on your ass?
29. When you received oral sex (i.e., a blowjob), were you embarrassed by the amount of pubic hair you have?
30. When you received oral sex (i.e., a blowjob), were you embarrassed by what your partner thought about the amount of pubic hair you have?

31. When you engaged in sexual activity, were you embarrassed by the smell of your genitals?
32. When you engaged in sexual activity, were you embarrassed by what your partner thought about the smell of your genitals?
33. When you engaged in sexual activity, were you embarrassed by the smell of your body?
34. When you engaged in sexual activity, were you embarrassed by what your partner thought about the smell of your body?
35. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed by the smell of your arse (ass)?
36. When you engaged in receptive anal intercourse (i.e., being the bottom/getting fucked), were you embarrassed by what your partner thought about the smell of your arse (ass)?
37. When you engaged in sexual activity, were you embarrassed by the smell of your breath?
38. When you engaged in sexual activity, were you embarrassed by what your partner thought about the smell of your breath?
39. When you engaged in sexual activity, were you embarrassed by the size of your testicles (i.e., too big or too small)?
40. When you engaged in sexual activity, were you embarrassed by what your partner thought about the size of your testicles (i.e., too big or too small)?
41. When you engaged in sexual activity, were you embarrassed by the way your testicles hang?
42. When you engaged in sexual activity, were you embarrassed by what your partner thought about the way your testicles hang?
43. When you engaged in sexual activity, were you embarrassed by blemishes (i.e., spots, pimples) on your skin?
44. When you engaged in sexual activity, were you embarrassed by what your partner thought about the blemishes (i.e., spots, pimples) on your skin?
45. When you engaged in sexual activity, were you embarrassed by having permanent scars on your face?

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46. When you engaged in sexual activity, were you embarrassed by having permanent scars on your body?
47. When you engaged in sexual activity, were you embarrassed by what your partner thought of the permanent scars on your face?
48. When you engaged in sexual activity, were you embarrassed by what your partner thought of the permanent scars on your body?
49. Did you engage in receptive anal intercourse (i.e., being the bottom/getting fucked) when you didn't want to?
50. Did you engage in insertive anal intercourse (i.e., being the top/fucking a guy) when you didn't want to?
51. Did you perform oral sex on your partner (i.e., give him a blowjob) when you didn't want to?
52. Did you receive oral sex from your partner (i.e., get a blowjob) when you didn't want it?
53. Did you fake an orgasm?
54. Did you engage in sexual activity that resulted in less enjoyment than you expected?
55. Were you concerned about your ability to please your partner sexually?
56. Did you question your sexual skills?
57. Were you embarrassed by your lack of sexual experience?
58. I am responsible for my partner's sexual fulfilment.
59. When I have an unsatisfying sexual experience, I tend to blame myself.
60. If my partner dislikes sex with me, I must be unattractive.
61. If my partner dislikes sex with me, I must be bad in bed.
62. Have you experienced a decline in your sex drive?
63. Have you experienced an increase in your sex drive?
64. Have you experienced a decline in your sexual fantasies?
65. Have you experienced an increase in your sexual fantasies?
66. Has your sex drive been lower than your partner's sex drive?
67. Has your sex drive been greater than your partner's sex drive?
68. Were you concerned about getting a sexually transmitted infection (e.g., syphilis, chlamydia, genital warts, etc.)?
69. Were you concerned about getting HIV?
70. If HIV+, were you concerned about getting AIDS?

71. Were you concerned about your partner getting a sexually transmitted infection (e.g., syphilis, chlamydia, genital warts, etc.)?

72. Were you concerned about your partner getting HIV?

73. If your partner is HIV+, were you concerned about him getting AIDS?

Note: For items 1 to 57 and 62 to 73 the response format is: Not Applicable, Never, Once or Twice, Several Times, Most of the Time, All of the Time.

For items 58, 59, 60, and 61 the response format is: Not applicable, Strongly Disagree, Disagree, Don't know, Agree, Strongly Agree. None of these items were retained in the final version of Sexual Difficulties Scale.

## **Appendix E**

### Final Version of the Gay Sexual Difficulties Scale

#### **Receptive Anal Difficulties**

1. When you engaged in receptive anal intercourse did you experience pain?
2. When you engaged in receptive anal intercourse, were you concerned about your ass being dirty?
3. When you engaged in receptive anal intercourse, were you concerned about your partner's penis being too big?
4. Have you had difficulty engaging in receptive anal intercourse because your partner's penis is too small?
5. Were you unable to engage in receptive anal intercourse because your ass was too loose?

#### **Insertive Anal Difficulties**

6. When you penetrated a guy anally (i.e., topped him/fucked him), did you cum sooner than you wanted?
7. When you penetrated a guy anally, did you take longer to cum than you wanted?
8. When you engaged in insertive anal intercourse did you experience pain?
9. Have you had difficulty engaging in insertive anal intercourse because your penis is too big?
10. Were you unable to engage in insertive anal intercourse because your partner's ass was too tight?

#### **Erectile Difficulties**

11. When you engaged in sexual activity, were you able to get an erection?
12. When you wanked (i.e., jerked off), were you able to get an erection?
13. When you engaged in sexual activity, were you able to maintain your erection (i.e., keep it up)?
14. When you wanked, were you able to maintain your erection?

**Body Embarrassment**

15. When you engaged in sexual activity, were you embarrassed that your partner thought your body is too fat?
16. When you engaged in sexual activity, were you embarrassed that your partner thought your body wasn't muscular?
17. When you engaged in sexual activity, were you embarrassed that your partner thought your stomach wasn't toned?
18. Were you concerned that your partner thought your body is sexually unappealing?

**Seminal Fluid Concerns**

19. When you engaged in sexual activity, were you concerned about the smell of your ejaculate (i.e., cum, spunk)?
20. When you engaged in sexual activity, were you concerned about the colour of your ejaculate?
21. When you engaged in sexual activity, were you concerned about the consistency (i.e., texture) of your ejaculate?

**Foreskin Difficulties**

22. When you engaged in sexual activity, did you experience any difficulties because your foreskin is too tight?
23. When you wanked, did you experience any difficulties because your foreskin is too tight?
24. When you engaged in sexual activity, did you experience any difficulties because your penis has too much foreskin?
25. Have you had any difficulties putting on a condom because your penis has too much foreskin?

Note: The response format is: Not Applicable, Never, Once or Twice, Several Times, Most of the Time, All of the Time. For items 11, 12, 13, and 14 the response format reverse scored.

**Appendix F**

Proposed Version of the Gay Sexual Difficulties Scale  
with Distress Indicators

1. a) When you engaged in receptive anal intercourse did you experience pain?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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2. a) When you engaged in receptive anal intercourse, were you concerned about your ass being dirty?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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3. a) When you engaged in receptive anal intercourse, were you concerned about your partner's penis being too big?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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4. a) Have you had difficulty engaging in receptive anal intercourse because your partner's penis is too small?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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5. a) Were you unable to engage in receptive anal intercourse because your ass was too loose?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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6. a) When you penetrated a guy anally (i.e., topped him/fucked him), did you cum sooner than you wanted?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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7. a) When you penetrated a guy anally, did you take longer to cum than you wanted?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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Appendices

8. a) When you engaged in insertive anal intercourse did you experience pain?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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9. a) Have you had difficulty engaging in insertive anal intercourse because your penis is too big?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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10. a) Were you unable to engage in insertive anal intercourse because your partner's ass was too tight?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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11. a) When you engaged in sexual activity, were you able to get an erection?

Not Applicable 0	All of the Time 1	Most of the Time 2	Several Times 3	Once or Twice 4	Never 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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12. a) When you wanked (i.e., jerked off), were you able to get an erection?

Not Applicable 0	All of the Time 1	Most of the Time 2	Several Times 3	Once or Twice 4	Never 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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13. a) When you engaged in sexual activity, were you able to maintain your erection (i.e., keep it up)?

Not Applicable 0	All of the Time 1	Most of the Time 2	Several Times 3	Once or Twice 4	Never 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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14. a) When you wanked, were you able to maintain your erection?

Not Applicable 0	All of the Time 1	Most of the Time 2	Several Times 3	Once or Twice 4	Never 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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15. a) When you engaged in sexual activity, were you embarrassed that your partner thought your body is too fat?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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16. a) When you engaged in sexual activity, were you embarrassed that your partner thought your body wasn't muscular?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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17. a) When you engaged in sexual activity, were you embarrassed that your partner thought your stomach wasn't toned?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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18. a) Were you concerned that your partner thought your body is sexually unappealing?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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19. a) When you engaged in sexual activity, were you concerned about the smell of your ejaculate (i.e., cum, spunk)?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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20. a) When you engaged in sexual activity, were you concerned about the colour of your ejaculate?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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21. a) When you engaged in sexual activity, were you concerned about the consistency (i.e., texture) of your ejaculate?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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22. a) When you engaged in sexual activity, did you experience any difficulties because your foreskin is too tight?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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23. a) When you wanked, did you experience any difficulties because your foreskin is too tight?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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24. a) When you engaged in sexual activity, did you experience any difficulties because your penis has too much foreskin?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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25. a) Have you had any difficulties putting on a condom because your penis has too much foreskin?

Not Applicable 0	Never 1	Once or Twice 2	Several Times 3	Most of the Time 4	All of the Time 5
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b) How much distress did this cause you?

Not Applicable 0	No Distress 1	Mild Distress 2	Moderate Distress 3	Severe Distress 4
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**Appendix G**  
Hospital Anxiety and Depression Scale  
(HADS; Zigmond & Snaith, 1983)

1. I feel tense or “wound up”.

Not at all 0	From time to time, occasionally 1	A lot of the time 2	Most of the time 3
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2. I still enjoy the things I used to enjoy.

Definitely as much 0	Not quite so much 1	Only a little 2	Hardly at all 3
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3. I get a sort of frightened feeling as if something awful is about to happen.

Not at all 0	A little, but it doesn't worry me 1	Yes, but not too badly 2	Very definitely and quite badly 3
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4. I can laugh and see the funny side of things.

As much as I always could 0	Not quite so much now 1	Definitely not so much now 2	Not at all 3
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5. Worrying thoughts go through my mind.

Only occasionally 0	From time to time, but not too often 1	A lot of the time 2	A great deal of the time 3
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6. I feel cheerful.

Most of the time 0	Sometimes 1	Not often 2	Not at all 3
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7. I can sit at ease and feel relaxed.

Definitely 0	Usually 1	Not often 2	Not at all 3
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8. I feel as if I am slowed down.

Not at all 0	Sometimes 1	Very often 2	Nearly all of the time 3
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9. I get a sort of frightened feeling like 'butterflies' in the stomach.

Not at all 0	Occasionally 1	Quite often 2	Very often 3
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10. I have lost interest in my appearance.

I take just as much care as ever 0	I may not take quite as much care 1	I don't take as much care as I should 2	Definitely 3
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11. I feel restless as I have to be on the move.

Not at all 0	Not very much 1	Quite a lot 2	Very much indeed 3
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12. I look forward with enjoyment to things.

As much as I ever did 0	Rather less than I used to 1	Definitely less than I used to 2	Hardly at all 3
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13. I get sudden feelings of panic.

Not at all 0	Not very often 1	Quite often 2	Very often indeed 3
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14. I can enjoy a good book or radio or TV program.

Often 0	Sometimes 1	Not often 2	Very seldom 3
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Note: Items 1, 3, 5, 7, 9, 11, and 13 represent anxiety; items 2, 4, 6, 8, 10, 12, and 14 represent depression.

**Appendix H**

International Index of Erectile Function

(IIEF; Rosen, Riley, Wagner, Osterloh, Kirkpatrick, & Mishra, 1997)

1. Over the last month, how often were you able to get an erection during sexual activity?

Did not engage in penetration 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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2. Over the last month, when you had erections with sexual stimulation, how often were your erections hard enough for penetration?

Did not engage in penetration 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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3. Over the last month, when you attempted intercourse, how often were you able to penetrate your partner?

Did not engage in penetration 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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4. Over the last month, during sexual intercourse, how often were you able to maintain your erection after you had penetrated your partner?

Did not engage in penetration 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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5. Over the last month, during sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?

Did not engage in penetration 0	Extremely difficult 1	Very difficult 2	Difficult 3	Slightly difficult 4	Not difficult 5
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6. Over the last month, how many times have you attempted sexual intercourse?

No attempts 0	1-2 times 1	3-4 times 2	5-6 times 3	7-10 times 4	11-20 times 5
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7. Over the last month, when you attempted sexual intercourse how often was it satisfactory for you?

Did not engage in penetration 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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8. Over the last month, how much have you enjoyed sexual intercourse?

Did not engage in penetration 0	No enjoyment 1	Not very enjoyable 2	Fairly enjoyable 3	Highly enjoyable 4	Very highly enjoyable 5
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9. Over the last month, when you had sexual stimulation or intercourse, how often did you ejaculate?

No sexual stimulation/intercourse 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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10. Over the last month, when you had sexual stimulation or intercourse, how often did you have the feeling of orgasm (with or without ejaculation)?

No sexual stimulation/intercourse 0	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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11. Over the last month, how often have you felt sexual desire?

Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
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12. Over the last month, how would you rate your level of sexual desire?

Very low or not at all 1	Low 2	Moderate 3	High 4	Very high 5
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13. Over the last month, how satisfied have you been with your overall sex life?

Not Applicable 0	Very dissatisfied 1	Moderately dissatisfied 2	About equally satisfied & dissatisfied 3	Moderately satisfied 4	Very satisfied 5
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14. Over the last month, how satisfied have you been with your sexual relationship with your partner?

Not Applicable 0	Very dissatisfied 1	Moderately dissatisfied 2	About equally satisfied & dissatisfied 3	Moderately satisfied 4	Very satisfied 5
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15. Over the last month, how do you rate your confidence that you can get your erection?

Very low 1	Low 2	Moderate 3	High 4	Very high 5
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16. Over the last month, how do you rate your confidence that you can keep your erection?

Very low 1	Low 2	Moderate 3	High 4	Very high 5
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**Appendix I**

Perceived Stress Scale

(PPS-4; Cohen & Williamson, 1988)

1. In the last month, how often have you felt that you were unable to control the important things in your life?
2. In the last month, how often have you felt confident about your ability to handle your personal problems?
3. In the last month, how often have you felt that things were going your way?
4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Note: The response format is: Never, Almost Never, Sometimes, Fairly Often, Very Often. Items 2 and 3 are reverse scored.

## Appendix J

### Revised Auburn Differential Masculinity Inventory (R-ADMI; Burk, Burkhart, & Sikorski, 2004)

1. I think gay men who cry are weak.
2. I don't feel guilty for long when I cheat on my boyfriend/husband.
3. There are two kinds of men: the kind I date, and the kind I would marry.
4. I like to tell stories of my sexual experiences to my male friends.
5. If a man struggles while we are having sex, it makes me feel strong.
6. If someone challenges me, I let them see my anger.
7. Many men are not as tough as me.
8. I value power over other people.
9. If a man puts up a fight while we are having sex, it makes the sex more exciting.
10. I prefer to watch contact sports like football or boxing.
11. I like to brag about my sexual conquests to my friends.
12. I can date many men at the same time without commitment.
13. I don't mind using physical violence to defend what I have.
14. I would initiate a fight if someone threatened me.
15. If some guy tries to make me look like a fool, I'll get him back.
16. I consider myself quite superior to most other men.
17. If another man made a pass at my boyfriend/husband, I would want to beat him up.
18. Sometimes, I have to threaten people to make them do what I want.
19. If I exercise, I play a real sport like football or weight-lifting.

Note: The response format is: Not at all like me, Not much like me, A little like me, Like me, Very much like me. The author recommends that the response options be switched periodically (e.g., Not at all like me - Very much like me for some items and Very much like me - Not at all like me for other items - see Barnette [2000]).

**Appendix K**

Male Body Image Self-Consciousness Scale

(M-BISC; McDonagh, Morrison, & McGuire; 2008)

1. During sex, I would worry that my partner would think my chest is not muscular enough.
2. During sexual activity, it would be difficult not to think about how unattractive my body is.
3. During sex, I would worry that my partner would think my stomach is not muscular enough.
4. I would feel anxious receiving a full-body massage from a partner.
5. The first time I have sex with a new partner, I would worry that my partner would get turned off by seeing my body without clothes.
6. I would feel nervous if a partner were to explore my body before or after having sex.
7. I would worry about the length of my erect penis during physically intimate situations.
8. During sex, I would prefer to be on the bottom so that my stomach appears flat.
9. The worst part of having sex is being nude in front of another person.
10. I would feel embarrassed about the size of my testicles if a partner were to see them.
11. I would have difficulty taking a shower or a bath with a partner.
12. During sexual activity, I would be concerned about how my body looks to a partner.
13. If a partner were to put a hand on my buttocks I would think, "My partner can feel my fat".
14. During sexually intimate situations, I would be concerned that my partner thinks I am too fat.
15. I could only feel comfortable enough to have sex if it were dark so that my partner could not clearly see my body.
16. If a partner were to see me nude I would be concerned about the overall muscularity of the body.

17. The idea of having sex without any covers over my body causes me anxiety.

Note: The response format is: Strongly Disagree, Disagree, Don't Know, Agree, and Strongly Agree. The author recommends that the response options be switched periodically (e.g., Strongly Disagree - Strongly Agree for some items, and Strongly Agree - Strongly Disagree for other items - see Barnette [2000]).