

**Love Hurts: The Description and Measurement of Sexual and
Relationship Distress in Couples.**

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ABSTRACT

Sexual disorders are highly prevalent, yet under researched when compared to other DSM-5 diagnoses. Sexual desire, in particular, is the most prevalent sexual concern for women, and substantially impacts the individual with low sexual desire, as well as their partner and the relationship. While the symptom clusters that comprise sexual desire and other dysfunctions are heterogeneous, they all require the presence of ‘distress’ in order to meet diagnostic criteria (American Psychiatric Association, 2013). The construct of distress is receiving increasing empirical interest, although the research to date remains in its infancy, suffers from a number of methodological flaws, and has focused on the individual rather than the relationship.

Along with the wave of research investigating sexual distress, has come the development of psychometric measures to assess the construct. Indeed, the International Consensus Development Conference on Female Sexual Dysfunction (Basson et al., 2000), and the Third International Consultation on Sexual Medicine (Clayton et al., 2010) have highlighted the need for new validated measures of sexual distress. Although a number of psychometrically validated measures have been developed, they have focused exclusively on the individual experiencing the distress, to the exclusion of the partner involved and the relationship more generally.

This thesis is divided into two sections: a literature review and a series of papers that have been published or submitted for publication. *Section 1* (Chapters 1-5) reviews the literature on sexual dysfunctions and disorders generally, and sexual desire more specifically, with a focus on sexual distress and its measurement. Chapter 1 provides a description of common sexual disorders within the context of models of the human sexual response, as well as their prevalence and risk factors. Chapter 2 focuses

primarily on low sexual desire, providing a detailed overview beginning with a description of the construct of sexual desire and introducing the history of sexual desire disorders within the Diagnostic and Statistical Manuals. In Chapter 3, information pertaining to the epidemiology and aetiology of sexual disorders is presented, while Chapter 4 provides a review of treatment strategies for low sexual desire. Finally, Chapter 5 focuses on sexual distress and provides a review of the current gold standard measures available.

Section 2 (Chapters 6-9) consists of a discussion paper and two research studies that have been submitted or accepted for publication. Chapter 6 (and Appendix S) presents a discussion paper published in the *Journal of Sexual and Relationship Therapy* (Frost & Donovan, 2015), that outlines the difficulties associated with operationalising the construct of sexual distress, and questioning whether we have the literature base to determine the differences between ‘normal’ and ‘abnormal’ levels of sexual desire in women, particularly when it appears to be a potentially normative response to a range of life circumstances. Given the movement within this field to view sexual desire from a couples perspective, and the difficulties experienced when treating low sexual desire in women, this paper concludes that sexual distress may in and of itself be an important research and treatment target.

Chapter 7 outlines a qualitative study investigating the distress and consequences experienced by women with low sexual desire and their partners (submitted to the *Journal of Sexual and Relationship Therapy*). For this study, semi-structured interviews were conducted with 26 participants (13 couples), and thematic analysis revealed 29 conceptually distinct forms of distress and consequence. Despite the complex and multi-faceted nature of distress, results of the study suggest that the

nature of individual and relationship distress, as experienced by men and women, is strikingly similar.

Chapter 8 outlines a study conducted to develop and psychometrically validate, a new measure of sexual and relationship distress. An initial pool of 73 items was created from the results of the earlier qualitative study outlined in Chapter 7, and administered using an online survey to 1,381 participants (462 men, 904 women and 14 who identified as 'other'), along with measures for the purposes of psychometric evaluation including the FSDS-R, CSI-16, DASS-21, and questions relating to sexual function. Exploratory (EFA) and Confirmatory Factor analyses (CFA) in separate split-half samples were conducted, and resulted in a psychometrically sound 30-item, 14 factor measure of sexual and relationship distress. The SaRDS improves upon other available measures due to its ability to be administered to both men and women, as well as the partner of an individual with any perceived or diagnosable sexual dysfunction. It also includes both sexual and relationship distress, and has the ability to provide both subscale and total scores. This study has been accepted for publication by the Journal of Sexual Medicine (Frost & Donovan, 2018). The SaRDS has also been accepted for publication in the new edition of the Handbook of Sexuality-Related Measures (Frost & Donovan, 2019), the manuscript for which is presented in Chapter 9.

The overall aim of these studies is to gain a deeper understanding of the distress and consequences experienced by both members of a couple when sexual difficulties are present within their relationship and to use these findings to create a new measure of sexual distress. While the first study recruited women with low sexual desire and their partners, the results showed equivalence in experience across gender and type of sexual difficulty. The measure created using the items developed from the first qualitative study supported these findings as it was developed and validated in a community

sample who reported a wide variety of sexual difficulties. Chapter 10 provides a discussion of the overall findings from these studies, and presents the strengths and limitations of the program of research as well as clinical implications and suggestions for future research, for the program of research as a whole. This thesis makes a unique and valuable contribution to our understanding and measurement of sexual and relationship distress within the context of sexual difficulties, and provides a foundational platform from which future research can build.

STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Rebecca Nancy Frost

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TABLE OF CONTENTS

ABSTRACT.....	ii
STATEMENT OF ORIGINALITY.....	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
LIST OF ABBREVIATIONS	xv
LIST OF PUBLICATIONS.....	xvii
ACKNOWLEDGEMENTS	xix
 SECTION 1 – LITERATURE REVIEW	 1
 CHAPTER 1 – SEXUAL DISORDERS	 2
Models of the Human Sexual Response.....	2
Linear Models of the Human Sexual Response.....	3
Circular Model of the Female Sexual Response.....	5
Evaluation of the Models of Sexual Response	7
Summary	8
Description of DSM-5 Sexual Disorders	8
Delayed Ejaculation	9
Erectile Disorder.....	10
Female Orgasmic Disorder	10
Female Sexual Interest/Arousal Disorder	11
Genito-Pelvic Pain/Penetration Disorder	12
Male Hypoactive Sexual Desire Disorder	13
Premature (Early) Ejaculation.....	14

Epidemiology of Sexual Disorders.....	14
Prevalence	15
Dysfunction vs. Disorder	16
Risk Factors for Sexual Dysfunctions.....	17
Sexual Dysfunctions within the Relationship Context.....	19
Chapter Summary	22
 CHAPTER 2 – SEXUAL DESIRE DISORDERS: DIAGNOSIS.....	23
Physiology of Sexual Desire	25
Cognitive Elements of Sexual Desire	26
Behavioural Expression of Sexual Desire.....	28
Gender Differences	31
Sexual Desire Discrepancy.....	33
Sexual Desire vs. Sexual Arousal.....	34
Sexual Desire Disorder	36
History of Sexual Desire Disorders	36
DSM-5 Changes.....	38
Chapter Summary	43
 CHAPTER 3 – SEXUAL DESIRE PROBLEMS: EPIDEMIOLOGY.....	44
Prevalence.....	44
Comorbidity	46
Aetiology of Sexual Desire Disorders.....	47
Chapter Summary	56
 CHAPTER 4 – SEXUAL DESIRE PROBLEMS: TREATMENT	57
Pharmacological Treatment.....	58
Sex Therapy.....	61
Cognitive Behavioural Therapy.....	61

Mindfulness.....	63
Couples Therapy.....	63
ISSWSH Guidelines.....	66
Chapter Summary.....	67
 CHAPTER 5 – SEXUAL AND RELATIONSHIP DISTRESS	69
Risk Factors of Sexual Distress	71
Measurement of Sexual Distress	73
Sexual Satisfaction Scale for Women (SSS-W)	74
Female Sexual Distress Scale - Revised (FSDS-R).....	75
Dyadic Adjustment Scale (DAS).....	77
Marital Satisfaction Inventory (MSI).....	78
Sexual Desire Relationship Distress Scale (SDRDS)	80
Issues with Current Measures of Distress.....	80
Section 1 Summary.....	81
 SECTION 2 – A SERIES OF RESEARCH STUDIES	83
Preamble	84
 CHAPTER 6 - LOW SEXUAL DESIRE IN WOMEN: AMONGST THE CONFUSION, COULD DISTRESS HOLD THE KEY?.....	86
Abstract	87
Women's Sexual Desire: What is normal?	88
What is sexual desire?	89
Changes to the DSM Criteria	89
Prevalence	92
Aetiology of low desire.....	94
What is normal desire?	98

Treatment for desire disorders.....	99
Desire-related distress	102
Summary and conclusion.....	105
References	107

CHAPTER 7 - A QUALITATIVE EXPLORATION OF THE DISTRESS AND CONSEQUENCES EXPERIENCED BY WOMEN WITH LOW SEXUAL DESIRE AND THEIR PARTNERS IN LONG-TERM RELATIONSHIPS114

Abstract.....	117
Introduction	118
Method.....	121
Participants	121
Measures	122
Procedure.....	124
Data Analysis	125
Results	126
Category 1: Behavioural Change	126
Category 2: Negative Emotions	131
Category 3: Impacts on Relationship	136
Category 4: Problematic Thoughts.....	140
Discussion	144
References.....	151

CHAPTER 8 - THE DEVELOPMENT AND VALIDATION OF THE SEXUAL AND RELATIONSHIP DISTRESS SCALE (SARDS)157

Abstract.....	159
Introduction	161
Materials and Methods	166

Data Analytic Plan	166
Participants	167
Procedure.....	170
Measures	170
Results	173
Exploratory Factor Analysis	173
Confirmatory Factor Analysis	178
Psychometric Properties	178
Discussion	183
References.....	186
 CHAPTER 9 - SEXUAL AND RELATIONSHIP DISTRESS SCALE.....	197
Development.....	198
Response Mode and Timing	199
Scoring.....	199
Reliability	200
Validity.....	200
References.....	202
 CHAPTER 10 - GENERAL DISCUSSION	203
Overall Aims.....	203
Synthesis of the Findings from the Compendium of Studies	205
Overall implications	206
Overall strengths and limitations	207
Concluding Comments.....	209
 REFERENCES.....	210

APPENDICES.....	241
Appendix A - Study 1 Ethical Clearance from Griffith University	242
Appendix B - Study 2 Ethical Clearance from Griffith University	244
Appendix C - Study 1 Information Sheet and Consent Form	246
Appendix D - Study 2: Information Sheet and Consent Form	251
Appendix E - Study 1 Recruitment Materials	255
Appendix F - Study 2 Recruitment Materials.....	257
Appendix G - Study 1 Phone Screen Questions	258
Appendix H Study 1 Semi-Structured Interview (Men)	261
Appendix I - Study 1 Semi-Structured Interview (Women)	266
Appendix J - Study 1 Demographic Questions.....	272
Appendix K - Sexual Desire Inventory (SDI).....	273
Appendix L - Kansas Marital Satisfaction Scale (KMSS).....	276
Appendix M - Depression Anxiety and Stress Scale – 21 item version	277
Appendix N - Female Sexual Distress Scale - Revised (FSDS-R)	278
Appendix O - Study 2 Demographic Questions	279
Appendix P - Original Items for Measure of Sexual and Relationship Distress....	280
Appendix Q - Couples Satisfaction Index (CSI-16)	282
Appendix R - Sexual Functioning Questions	284
Appendix S - Published Copy of Chapter 6 Paper.....	285
Appendix T - Sexual and Relationship Distress Scale (SaRDS).....	300

LIST OF TABLES

SECTION 1 – LITERATURE REVIEW

Table 1	Themes, sub-themes and categories associated with influencing women's sexual desire.....	68
---------	--	----

SECTION 2 – A SERIES OF RESEARCH STUDIES

CHAPTER 7

A Qualitative Exploration of the Distress and Consequences Experienced by Women with Low Sexual Desire and their Partners in Long-Term Relationships

Table 1	Categorisation and frequencies of distressing consequences of low sexual desire within a relationship context.....	155
---------	--	-----

CHAPTER 8

The Development and Validation of the Sexual and Relationship Distress Scale (SaRDS)

Table 1	Participant characteristics.....	169
Table 2	Factor loadings for items included within the Sexual and Relationship Distress Scale.....	176
Table 3	Subscale Items, Range, Reliabilities, Means, Standard Deviations, and Correlations (N = 1192).....	180
Table 4	Means and Standard Deviations for Sub-Populations by Sexual Difficulty.....	182

CHAPTER 9

Sexual and Relationship Distress Scale

Table 1	Subscale and total score items, range, internal reliability, means and standard deviations.....	200
---------	---	-----

LIST OF FIGURES

SECTION 1 – LITERATURE REVIEW

Figure 1	Kaplan’s linear model of the human sexual response.....	23
Figure 2	Basson’s circular model of the female sexual response.....	25
Figure 3	McCabe’s model of sexual dysfunction within a relationship.....	40
Figure 4	DSM-IV-TR criteria for Hypoactive Sexual Desire Disorder.....	55
Figure 5	DSM-5 diagnostic criteria for Male Hypoactive Sexual Desire Disorder	59
Figure 6	DSM-5 diagnostic criteria for Female Sexual Interest / Arousal Disorder	60
Figure 7	Women's causal attributions for their loss of sexual desire	69
Figure 8	The ISSWSH process of care for managing low sexual desire in women	86

SECTION 2 – A SERIES OF RESEARCH STUDIES

Chapter 6 - Low sexual desire in women: amongst the confusion, could distress hold the key?

Figure 1	DSM-5 diagnostic criteria for Female Sexual Interest / Arousal Disorder	91
Figure 2	DSM-IV diagnostic criteria for Hypoactive Sexual Desire Disorder.....	92
Figure 3	Circular model of the female sexual response.....	97

LIST OF ABBREVIATIONS

Abbreviation	Meaning
AOR	Adjusted odds ratio
BSRC	Basson's sexual response cycle
CBT	Cognitive behavioural therapy
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CO	Couples only
CSI-16	Couples Satisfaction Index – 16 item version
CWP	Chronic widespread pain
DAS	Dyadic Adjustment Scale
DASS-21	Depression, Anxiety and Stress Scale – 21 item version
DE	Delayed ejaculation
DSMI-I	Diagnostic and Statistical Manual of Mental Disorders – First Edition
DSM-II	Diagnostic and Statistical Manual of Mental Disorders – Second Edition
DSM-III	Diagnostic and Statistical Manual of Mental Disorders – Third Edition
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition Text Revision
DSM-5	Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition
ED	Erectile dysfunction
EFA	Exploratory factor analysis
EFT	Emotion focused therapy
FDA	Food and Drug Administration
FSD	Female sexual dysfunction
FSDQ	Female Sexual Desire Questionnaire
FSDS	Female Sexual Distress Scale
FSDS-R	Female Sexual Distress Scale – Revised
FSFI	Female Sexual Function Index
FSIAD	Female sexual interest / arousal disorder
GTM	Grounded theory methodology
HSDD	Hypoactive sexual desire disorder
IELT	Intravaginal ejaculatory latency time
ISSWSH	International Society for the Study of Women's Sexual Health
KMO	Kaiser-Meyer Olkin measure of sampling adequacy
KMSS	Kansas Marital Satisfaction Scale
M	Mean
MSD	Male sexual dysfunction
MSI	Marital Satisfaction Inventory
MSI-R	Marital Satisfaction Inventory - Revised
Natsal-3	National Survey of Sexual Attitudes and Lifestyle
NFI	Normed fit index
NHSLs	National Health and Social Life Survey
PE	Premature ejaculation

PFSF	Profile of Female Sexual Function
POC	Process of care
PRESIDE	Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking study
PRO	Patient-reported outcome measure
RCT	Randomised control trial
RDAS	Revised Dyadic Adjustment Scale
RMSEA	Root mean square error of approximation
SaRDS	Sexual and Relationship Distress Scale
SD	Standard deviation
SDD	Sexual desire discrepancy
SDI-2	Sexual Desire Inventory – Second Edition
SDRDS	Sexual Desire Relationship Distress Scale
SFQ	Sexual Function Questionnaire
SSE	Satisfying sexual experience
SSS-W	Sexual Satisfaction Scale for Women
STD	Sexually transmitted disease
WL	Waitlist
WO	Women only

LIST OF PUBLICATIONS

Included in this thesis are papers that have been published, accepted or submitted for publication in Chapters 6,7,8 and 9, which are co-authored with other researchers. My contribution to each co-authored paper is outlined at the front of the relevant chapter.

Chapter 6: Frost, R. N., & Donovan, C. L. (2015). Low sexual desire in women: amongst the confusion, could distress hold the key? *Sexual and Relationship Therapy*, 30(3), 338-350. doi:10.1080/14681994.2015.1020292

Chapter 7: Frost, R. N., & Donovan, C. L. (2018). A Qualitative Exploration of the Distress and Consequences Experienced by Women with Low Sexual Desire and their Partners in Long-Term Relationships. Manuscript accepted for publication.

This paper has also been presented at the following conferences:

Frost, R. N., & Donovan, C. L. (2016). *A description of the distress and consequences resulting from low sexual desire*. Paper presented at the Gold Coast Health and Medical Research Conference, Surfers Paradise, Australia.

Frost, R. N. (2017). *A deeper understanding of the distress and consequences reported by couples who experience difficulties with sexual desire*. Paper presented at the Society for the Scientific Study of Sexuality Australian Symposium, Sydney, Australia.

Frost, R. N., & Donovan, C. L. (2018). *A Qualitative Exploration of the Distress Resulting from Sexual Desire Difficulties in Couples*. Paper presented at the 21st World Meeting on Sexual Medicine, Lisbon, Portugal.

Chapter 8: Frost, R. N., & Donovan, C. L. (2018). The Development and Validation of the Sexual and Relationship Distress Scale (SaRDS). *Journal of Sexual Medicine*, in press.

Chapter 9: Frost, R. N., & Donovan, C. L. (2019). Sexual and Relationship Distress Scale. In R. R. Milhausen, T. Fisher, C. M. Davis, W. Yarber, & J. K. Sakaluk (Eds.), *Handbook of Sexuality-Related Measures* (4th Edition ed.): Taylor & Francis.

Papers 3 and 4 have also been presented at the following conferences:

Frost, R. N., & Donovan, C. L. (2017). *The development and properties of the Sexual and Relationship Distress Scale*. Paper presented at the 16th Annual Conference of the APS Psychology of Relationships Interest Group, Melbourne, Australia.

Frost, R. N., & Donovan, C. L. (2018). *The development and psychometric properties of the Sexual and Relationship Distress Scale (SaRDS)*. Paper presented at the 21st World Meeting on Sexual Medicine, Lisbon, Portugal.

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gotten through the intensive practicums and coursework section of this degree. Since then, the writing retreats, sounding board and more recently your incredible hours of editing while caring for baby Rosie has been more giving than I could ever ask for. Another very special friend is sadly not here to see the end of the journey she has been such a big part of. Gitana Proietti-Scifoni, you were my first friend at university and quickly became my best friend. You never questioned the sanity of doing a PhD and supported me emotionally and practically by transcribing interviews and editing drafts. I wish you could see that I got there in the end.

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SECTION 1 – LITERATURE REVIEW

Chapter 1 – Sexual Disorders

Chapter 2 – Sexual Desire Problems: Diagnosis

Chapter 3 – Sexual Desire Problems: Epidemiology

Chapter 4 – Sexual Desire Problems: Treatment

Chapter 5 – Sexual and Relationship Distress

CHAPTER 1 – SEXUAL DISORDERS

Sexuality is a core component of the human experience, being central to our bonding and mating behaviour. When an individual orgasms, they are found to have a higher plasma level of oxytocin (the bonding hormone also released to allow mother and baby to bond after birth) and their dopaminergic reward system is stimulated (Young & Wang, 2004). It appears that when sexual behaviour leads to satisfying sexual activity between two consenting individuals, it creates partnerships, wellbeing, and ultimately the possibility of procreation. However, the human sexual response is a delicate balancing act of hormonal and neurotransmitter actions, that are both stimulated and interrupted by other physiological, social, psychological and environmental factors (Pfaus, 2009). There is therefore great variability in the expression of sexuality. When the sexual response is interfered with, male (MSD) and female (FSD) sexual dysfunctions can occur and cause significant impairment and distress. This chapter will: provide a brief overview of the models that describe the functional/dysfunctional sexual response; outline the prevalence, presentation and treatment of the most recognised of the sexual disorders; and provide a summary of the risk factors associated with sexual dysfunction.

Models of the Human Sexual Response

In order to best understand sexual dysfunction, it is important to first understand normal sexual function. Modern research into sexual functioning was pioneered by Masters and Johnson in the 1950s and 1960s (Masters & Johnson, 1966) with their linear model of the human sexual response that was later expanded upon by colleagues such as Leif (1977) and Kaplan (1979). More recently, Rosemary Basson has

reconceptualised these earlier linear models, and put forward a circular model of the female sexual response (2000). Each of these models will be outlined below.

Linear Models of the Human Sexual Response

Masters and Johnson's major contribution to the science of sexuality research has been their three-phase linear model of the human sexual response (1966). Upon observing thousands of men and women reach orgasm through masturbation and intercourse, they described a predictable linear pattern of sexual response. They suggested that each individual goes through an excitation phase where their bodies become aroused and prepared for orgasm, before eventually reaching an orgasmic peak (orgasm phase), followed by a reduction in arousal (resolution phase). Since its inception, the model has been modified by Kaplan (1979), who added a preceding desire phase and removed the original resolution phase.

A four-phase model, combining both Masters and Johnson's and Kaplan's conceptualisations, is now generally accepted. As shown in Figure 1, the four-phase model follows the linear pattern of excitement, plateau, orgasm, and resolution (Kaplan, 1979). The first phase, sexual desire, relates to the motivational aspects of the sexual response. The second phase, or excitement phase, refers to the physiological changes that accompany arousal and relates to erectile function in men and lubrication in women. The third, orgasm phase, is concerned with pleasure, and relates to contractions of genital muscles in women as well as ejaculation in men. The final phase is the resolution phase where relaxation, bonding and a sense of well-being is experienced in the absence of any of the aforementioned sexual difficulties or pain disorders (Raymond C. Rosen, 2000).

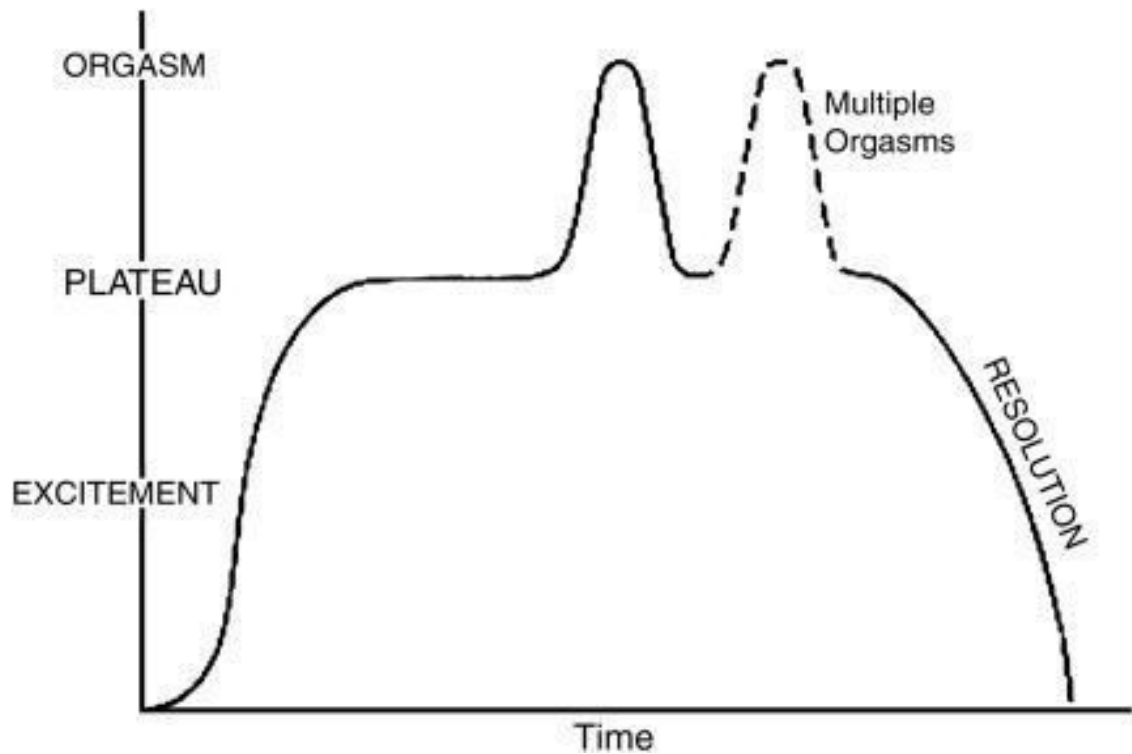


Figure 1. Kaplan's linear model of the human sexual response.

Despite worldwide acceptance, the models proposed by both Kaplan and Masters and Johnson have come under scrutiny. First, there is likely to have been a strong sampling bias evident in their research. Inclusion criteria for participation in their studies conducted in the 1950's and 1960's included a willingness to have intercourse in a laboratory. Thus, the representativeness of their participants, particularly women, is questionable. Second, the desire phase was not investigated in their studies, presumably due to participants having agreed to sexual activity within a laboratory setting (Meuleman, 2005). As a result, although their linear models of sexual response quite closely describe the sexual experience of many men and women at the beginning of a new relationship, it does not account for the changes that occur with longer-term relationships, ageing and the introduction of life stressors such as becoming parents (Basson, 2000). Third, by limiting their focus to the physiology of the sexual response, the linear models ignore the interpersonal aspects of sexual experiences, including the

need for trust, intimacy, respect, communication and pleasure (Leiblum, 2007; Meana, 2010; Nimbi, Tripodi, Rossi, & Simonelli, 2018).

Circular Model of the Female Sexual Response

After many years of conducting clinical work with women with low desire, Rosemary Basson (2000) arrived at an alternative, female-specific model of the female sexual response (Figure 2). In keeping with more contemporary theory and research emphasising the overlap between desire and arousal (a more detailed explanation of which is provided below), as well as incorporating more recent knowledge regarding women's motivations for sex (discussed in detail below), the model is more intimacy- and emotion-based compared to the pure behavioural/physiological model proposed by Masters and Johnson (Basson, 2000). Perhaps the most important difference between Basson's model and that of Masters and Johnson, is the introduction of the idea that women may experience 'responsive' rather than 'spontaneous' sexual desire, and that desire can appear at any point in the cycle rather than being limited to the beginning stages (Meana, 2010).

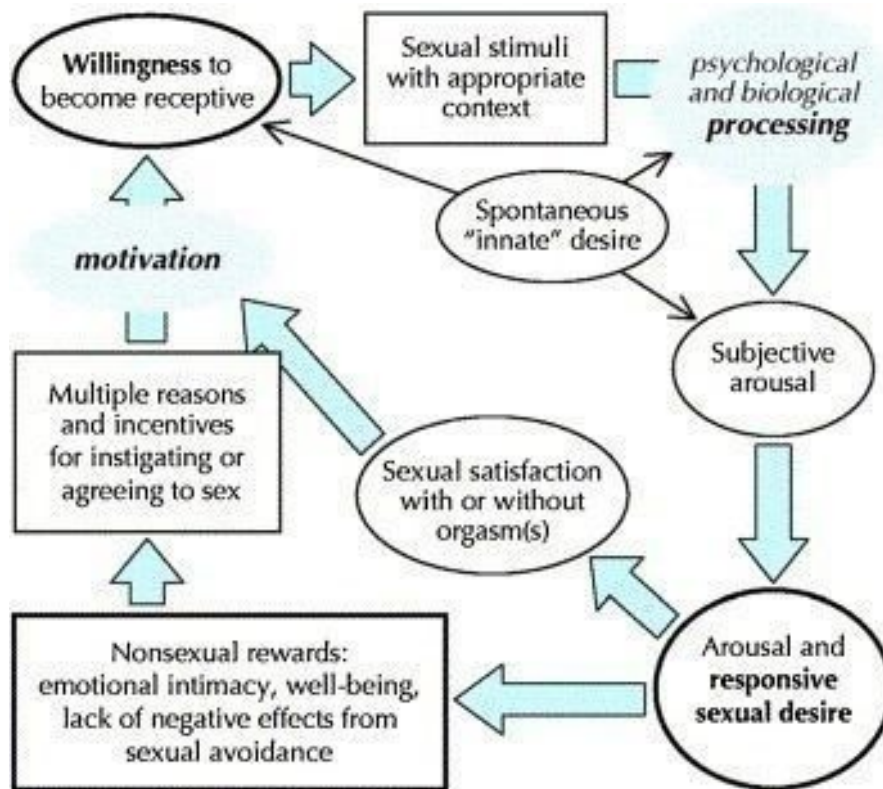


Figure 2. Basson's circular model of the female sexual response.

According to Basson (2000), women are often sexually neutral at the beginning of a sexual experience. Then, for any reason that the individual finds motivating, they may attend to, and process, sexual stimuli and in turn experience a sense of subjective arousal, followed by feeling a definite desire to continue with the sexual experience. The decision to continue with sexual activity is based upon many factors including nonsexual rewards (e.g. intimacy) and sexual rewards (e.g., orgasm), resulting in a general willingness to be receptive. Basson's suggestion of a more 'responsive' form of sexual desire in women is supported qualitatively, with women rarely reporting spontaneous desire within their relationships (Goldhammer & McCabe, 2011b). The model suggests that sexual satisfaction and nonsexual rewards such as emotional intimacy, that occur as the result of responsiveness, is reinforcing and facilitates the

recurrence of responsiveness (Meana, 2010). Earlier research investigating the sexual response did not consider that sexual desire can be ‘responsive’ rather than a spontaneous first step in the sexual response (Nimbi et al., 2018).

Evaluation of the Models of Sexual Response

Despite a fervent debate regarding how best to model the female sexual response, studies have suggested that perhaps both the linear and circular models can explain different parts of the experience. For example, in a study by Sand and Fisher (2007), 111 female registered nurses in current relationships were provided with brief descriptions of the Masters and Johnson, Kaplan, and Basson models. Results showed that approximately equal numbers of participants endorsed each model as being representative of their experience. Interestingly, the women who preferred the Basson model also scored lower on a measure of sexual function, indicating that this model may better represent those with sexual issues. Another study by Giles and McCabe (2009), who surveyed 404 women about their sexual response, found that although the linear model represented both sexually functional and dysfunctional women, Basson’s circular model of women’s sexual response did not represent either. However, upon modifying the circular model by fusing desire and arousal (rather than portraying them as distinct phases), the model was found to represent both sexually functional and dysfunctional women, although it was more consistent with women experiencing sexual dysfunction than those without.

Although Basson’s circular model of sexual response was specifically designed to describe the female experience, researchers have recently investigated its utility with males. Giraldi et al (2015) showed 401 male and 429 female participants the three models of sexual function. They found that male and female participants endorsed the models at different rates, with females preferring the Kaplan model (34%) over the

Masters & Johnson (28%) and Basson models (25.6%), and males endorsing the Masters & Johnson (48.5%) and Kaplan (38.3%) models at a much higher rate than the Basson model (5.4%). Despite these differences, for both genders, the presence of sexual dysfunction was significantly related to endorsement of either the Basson model or none of the models, again suggesting that the circular model of sexual functioning better describes the experience of individuals with sexual difficulties.

Summary

The important work of Masters and Johnson, Kaplan, and Basson have provided us with valuable models through which to understand the human sexual response, and have set the stage for further sexual research. However, research investigating sexual function remains in its infancy when compared to other aspects of psychological and biological functioning, and we are yet to have acquired a full understanding, with no model yet able to definitively explain the numerous variations of human sexual response. Furthermore, it is clear that sexual function is complex and heterogeneous and must be viewed through a biopsychosocial lens.

Description of DSM-5 Sexual Disorders

The Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-5; American Psychiatric Association, 2013) is one of the most widely used categorical classification systems for diagnosing sexual disorders. Each disorder in the DSM-5 is systematically described, and a minimum number of symptoms and/or criteria must be met before a diagnosis can be given. According to the DSM-5, individuals may be diagnosed with the following sexual disorders: delayed ejaculation, erectile disorder, female orgasmic disorder, female sexual interest/arousal disorder, genito-pelvic pain/penetration disorder, male hypoactive sexual desire disorder, premature (early) ejaculation, substance/medication induced sexual dysfunction, other

specified sexual dysfunction, and unspecified sexual dysfunction (American Psychiatric Association, 2013). Please note that this section will not include the paraphilic disorders as the focus of this thesis is on sexual dysfunction. This section provides a brief overview of the sexual disorders, including their presentation, risk factors, prevalence and treatment options. Sexual desire concerns will be discussed in more detail in Chapter 2.

Delayed Ejaculation

The distinguishing feature of delayed ejaculation disorder is the inability or delay in ejaculation despite adequate stimulation and desire, on almost all or all occasions (approximately 75% - 100% of the time) (McCabe, Sharlip, Atalla, et al., 2016). Delayed ejaculation (DE) is the least prevalent (present in 1 - 10% of males) (Perelman & Rowland, 2006), and therefore the most under-researched, of the male sexual disorders (Althof, 2012). There is no consensus on what is considered a reasonable time to achieve orgasm, and therefore no consensus on a precise definition of the length of delay that is considered problematic (American Psychiatric Association, 2013). Rather, the man (or his partner) typically reports an inability to ejaculate up to the point at which thrusting is ceased due to discomfort or exhaustion. Furthermore, the problem seems to occur with partnered sexual activity rather than masturbation. DE can be caused by biological (including lifelong anatomical or neurogenic abnormalities and acquired injury, infection or medication causes) as well as psychological and interpersonal determinants (Althof, 2012). Although there are no approved drug treatments for DE (Hartmann & Waldinger, 2007), there is a wide range of psychological treatment options depending on the precipitating and maintaining factors for the individual that include (but are not limited to) sensate focus, cognitive behavioural therapy (CBT), masturbation retraining, and couples therapy (Althof,

2012). DE has obvious implications for conception as well as psychological sequelae for both men and their sexual partner.

Erectile Disorder

The central feature of erectile disorder (ED) is the inability for a man to gain or sustain an erection during partnered sexual activities. Penile erection is a neuromuscular event that can be effected by vascular and neurological conditions, as well as psychological and hormonal factors (Lue, 2000). To meet diagnostic threshold, the inability to maintain an erection must be present at least 75% of the time and the problem must have been present for at least 6 months. ED may be present only in specific sexual situations, partners or types of stimulation, or may be generalised to all types of sexual situations (American Psychiatric Association, 2013). ED is relatively common, being a problem for 11% of Australian males and is also strongly age related, with a much higher prevalence after the age of 50 years (De Visser, Richters, Yeung, Rissel, & Simpson, 2017). Causes of ED can be psychogenic, organic or a mix of both, and therefore requires different treatments depending on the underlying problem. Treatments can include drug therapy (testosterone, PDE5 inhibitors, and multiple adrenergic-receptor antagonists), surgical implants, and psychological therapy that targets performance anxiety, behavioural changes, or relationship satisfaction (Lue, 2000). Although the evidence to date is limited, it seems that for some men, ED naturally remits over time while for others the disorder can be very persistent (American Psychiatric Association, 2013).

Female Orgasmic Disorder

Female Orgasmic Disorder is a condition in which a female experiences difficulties in, delays with, or absence of, orgasm, or reports reduced orgasmic sensations following sufficient sexual stimulation and arousal (Basson et al., 2000; Clayton,

2007). It is acknowledged that subjective reports of orgasm by women vary widely, suggesting that the experience varies both between individuals, and even within an individual on different occasions. For this diagnosis to be applied, a woman must experience difficulties achieving orgasm in nearly all sexual encounters over a 6 month period, and must report personal distress as a result (American Psychiatric Association, 2013).

A relatively small percentage of women report that they always reach orgasm through penetrative sex, with the majority requiring some degree of clitoral stimulation (Jannini et al., 2012). Therefore, this disorder does not apply to women who are able to reach orgasm through clitoral stimulation, even if problems are present through penetrative sex. Similarly, an exclusion for this disorder is noted if the orgasmic difficulties are due to inadequate sexual stimulation. Although the biological mechanisms of sexual arousal and orgasm in women are poorly understood (Basson et al., 2000), some women report difficulties with orgasm as a side-effect of SSRIs and other psychotropic medications, as well as being the result of major life stressors or relationship dissatisfaction. Treatment can include medication, oestrogen and testosterone therapy, as well as psychological treatment such as psychoeducation and sensate focus exercises (Kingsberg et al., 2017).

Female Sexual Interest/Arousal Disorder

Female sexual interest/arousal disorder (FSIAD) is a new condition introduced in the DSM-5 (American Psychiatric Association, 2013) and outlined in more detail in Chapter 2. It is a combination of hypoactive sexual desire disorder (HSDD) and sexual arousal disorder that were included in the previous edition of the DSM, the DSM-IV-TR (American Psychiatric Association, 2000). Hypoactive desire can be defined as the 'deficiency (or absence) of sexual fantasies/thoughts, and/or desire for, or receptivity

to, sexual activity’. In contrast, sexual arousal problems relate to the ‘inability to attain or maintain sufficient sexual excitement which may be expressed as a lack of subjective excitement, or genital (lubrication/swelling) or other somatic responses’ (Clayton, 2007, p. 261).

In order for female sexual interest/arousal disorder to apply, there must be either an absence of, or a significant reduction in, three of the following elements: interest in sex, erotic thoughts or fantasies; initiating or being receptive to partner-initiated sexual activity; excitement or pleasure in sexual activity; response to internal or external sexual cues; and genital or non-genital pleasure from sexual encounters. Given this diverse symptom profile, it is noted that female sexual interest/arousal disorder may present in different ways in different women and at different times. However, it must be differentiated from simple desire discrepancy, where the woman has a lower desire for sexual activity than her partner. FSIAD is excluded if a self-reported status of “asexual” better explains the sexual pattern reported. Chapter 2 will outline in more detail, the various definitions of FSIAD together with the controversial changes made to its diagnosis in DSM-5, while Chapters 3 and 4 will outline the risk factors and treatment options available for FSIAD in greater detail.

Genito-Pelvic Pain/Penetration Disorder

Genito-pelvic pain/penetration disorder has four central features that are often co-morbid: difficulty with vaginal penetration during sex; vulvovaginal or pelvic pain during vaginal penetration or attempts to penetrate; anxiety about pain either before, during or after vaginal penetration; and tensing or tightening of the muscles of the pelvic floor during attempted penetration (American Psychiatric Association, 2013). Within the DSM-IV-TR, these difficulties were separated into dyspareunia (genital pain associated with intercourse) and vaginismus (involuntary spasm of muscles that

interfere with vaginal penetration) (Basson et al., 2000; Clayton, 2007). Genito-pelvic pain/penetration disorder can vary from a total inability to experience penetration in any situation (gynaecological exams, tampon insertion etc.) in some cases, to cases where some forms of penetration are achieved relatively easily but not across all situations. The most common clinical presentation involves a woman who is unable to experience penetrative sex with her partner, and will typically also experience problems with gynaecological examination. The pain reported by women varies, may be superficial (limited to the vulva or vaginal area) or deep (not experienced until deeper penetration), and may cause significant individual and relationship distress (Muise, Bergeron, Impett, Delisle, & Rosen, 2018). Genital pain can have varied psychological and somatic causes, including endometriosis, oestrogen deficiency, prolapse, cancer therapy and infections, as well as anxiety and sexual abuse or trauma (Fugl-Meyer, 2013). Treatment courses vary and can include medical or surgical interventions, sex therapy, couples therapy or psychological therapy (CBT or mindfulness) (Fugl-Meyer, 2013; Rosenbaum, 2013) and physiotherapy (Rosenbaum & Owens, 2008).

Male Hypoactive Sexual Desire Disorder

Male hypoactive sexual desire disorder (HSDD) pertains to a persistent or recurrent lack of sexual thoughts, fantasies or desire for at least six months (American Psychiatric Association, 2013). Similar to female sexual interest/arousal disorder, context must be taken into account when diagnosing HSDD. A desire discrepancy where the male has a lower sexual desire than the female is not in itself diagnostic. This caveat is meant as a safeguard to ensure that diagnosis is not made in instances where lack of desire is normative and transient in the light of contextual factors. Male sexual desire problems have been researched to a much lesser degree than female

sexual desire problems, although they have been found to be associated with psychological and biological causes including chronic disease (Meuleman & Van Lankveld, 2005), fatigue, premature ejaculation (Nimbi et al., 2018), low income (Beutel, Stöbel-Richter, & Brähler, 2008), erectile difficulties and relationship distress (Carvalho, Træen, & Štulhofer, 2014). As will be outlined later, there has been little research investigating treatments for the disorder.

Premature (Early) Ejaculation

Premature ejaculation (PE) is the most common male sexual disorder (Hendrickx, Gijls, & Enzlin, 2016) and is characterised by ejaculation that occurs prior to vaginal penetration or shortly after (American Psychiatric Association, 2013). If the problem is life-long and has been occurring since the first sexual encounter, then PE is typically defined as an intravaginal ejaculatory latency time (IELT) of less than one minute between penetration and ejaculation. Acquired PE (i.e., not lifelong) is typically defined as a decrease in IELT to three minutes or less (Serefoglu et al., 2014). This latency period is applied specifically to vaginal penetration. Although PE can occur in other penetrative sexual activities, specific latency for these activities has not been defined. Men experiencing PE often complain of a lack of control over ejaculation, and anxiety regarding anticipated penetrative sexual activities. Treatment options are pharmacotherapy for lifelong PE (SSRIs or local anaesthetic agents), and either pharmacotherapy, behavioural sex therapy or a combination of both, for acquired PE (Hatzimouratidis et al., 2010).

Epidemiology of Sexual Disorders

Unlike other diagnostic categories such as anxiety or depressive disorders that share underlying mechanisms, risk factors and treatment techniques, it is clear that sexual disorders are clustered together loosely and are highly heterogeneous in their

symptomatology, risk factors and treatments. Sexual disorders vary in the degree to which they are physiologically or psychologically based, and have widely varying prevalence rates, lifetime trajectories, and impacts upon the individual. This section will provide a brief summary of the prevalence and risk factors of sexual dysfunctions.

Prevalence

Prevalence studies estimate the proportion of the population that have a particular dysfunction at any given time. Based on the available research, it appears that sexual dysfunctions are highly prevalent in both sexes, with rates ranging from 31% to 51% (De Visser et al.; Hendrickx, Gijs, & Enzlin, 2016; King, Holt, & Nazareth, 2007; Laumann, Paik, & Rosen, 1999; Moreira et al., 2005; Raymond C. Rosen, 2000; Shifren, Monz, Russo, Segreti, & Johannes, 2008). Prevalence varies across gender lines, with women experiencing higher rates of sexual dysfunction (25%-63%) than men (10%-52%) (Hendrickx, Gijs, & Enzlin, 2016; Laumann et al., 1999; McCabe, Sharlip, Lewis, Atalla, Balon, Fisher, Laumann, & Lee, 2016; R. C. Rosen, Taylor, Leiblum, & Bachmann, 1993).

The most common female dysfunctions reported in a large U.S. sample of 31,581 respondents were low desire (38.7%) and low arousal (26.1%) (Shifren et al., 2008). In an Australian sample of 20,094, lacking interest in sex was reported by 51% of female participants, and vaginal dryness was reported by 22% of women (De Visser et al.). Other female dysfunctions such as vaginismus and dyspareunia (16%) are less common and are therefore studied less frequently (McCabe, Sharlip, Lewis, et al., 2016a). For men, premature ejaculation (9.2%) and erectile dysfunction (8.1%) have been found to be the most common sexual dysfunctions in a Belgian sample (Hendrickx, Gijs, & Enzlin, 2016), and low sexual desire (27%), reaching orgasm too quickly (21%) and erectile problems (11%) were found to be most common within an

Australian male sample (De Visser et al., 2017), with other male dysfunctions such as pain during intercourse (2%) and inability to reach orgasm (7%) reported less frequently (McCabe, Sharlip, Lewis, et al., 2016a). It must be noted, however, that true prevalence rates are difficult to determine due to substantial differences in definition and measurement of sexual dysfunctions across studies (McCabe, Sharlip, Lewis, Atalla, Balon, Fisher, Laumann, & Lee, 2016), an issue that will be discussed more fully in relation to sexual desire disorders in Chapter 2.

Dysfunction vs. Disorder

An important consideration for understanding the wide-ranging prevalence rates in the current literature, is the well-established fact that not all people find their dysfunction distressing (Shifren et al., 2008). The presence or absence of distress determines whether an individual is experiencing a sexual dysfunction (symptoms are present but distress is not) or a sexual disorder (both symptoms and related distress are present), with diagnosis of a sexual disorder requiring that mild, moderate or severe personal distress be reported (Parish & Hahn, 2016). However, not all prevalence studies require participants to report on distress, thus potentially inflating the prevalence rates of sexual disorders.

One study that investigated the prevalence rates of both sexual dysfunction and disorders (not desire-specific) was the Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking (PRESIDE) study (Shifren et al., 2008). The PRESIDE study was a large population-based survey of adult females in the United States (N = 31,581), that required women to report on the presence or absence of common sexual problems. Distress about sexual concerns was measured using the Female Sexual Distress Scale (FSDS; DeRogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). Although 44.2% of females endorsed the presence of a

sexual problem (similar to previous studies), only 22.8% reported personal distress. Indeed, multiple studies (predominantly conducted with female participants), have found that only between one third and one half of individuals with sexual dysfunction also report distress (Burri, Rahman, & Spector, 2011; Hayes, Dennerstein, Bennett, & Fairley, 2008; Hendrickx, Gijs, & Enzlin, 2013, 2016; King et al., 2007; O'Sullivan, Brotto, Byers, Majerovich, & Wuest, 2014; Raymond C. Rosen et al., 2009; Worsley, Bell, Gartoulla, & Davis, 2017). For the remainder of this thesis therefore, the author will instead use terms such as 'sexual difficulties' or 'sexual problems' unless the use of the correct term (disorder / dysfunction) is central to the point being made.

Risk Factors for Sexual Dysfunctions

According to Kraemer et al (1997), a risk factor is a measurable characteristic that precedes an outcome of interest and can be used to divide the population into high and low risk. A review of the literature over the last few decades illustrates that there is an array of biological, psychological, lifestyle, environmental and relationship risk factors for sexual dysfunctions. It should be noted that research to date has been almost entirely correlational in nature, thus precluding firm conclusions regarding the direction of causality. Furthermore, rather than clear predictors and trajectories, our current knowledge of the aetiology of sexual dysfunction indicates that there is no unitary pathway. Although a comprehensive discussion of all risk factors as they pertain to each type of sexual dysfunction is beyond the scope of this thesis, a number of known risk factors will be introduced briefly here and expanded upon in more detail in Chapter 3 as they pertain to sexual desire disorders.

A recent review of research investigating both male (MSD) and female (FSD) sexual dysfunction found that many more studies investigated the risk factors for MSD rather than FSD (McCabe, Sharlip, Lewis, et al., 2016b), and that there were many

similarities, but also some differences in the results found. For MSD, a number of biological factors and health concerns have been implicated in addition to those listed above for both genders, and include increasing age (Hendrickx, Gijs, & Enzlin, 2016; Laumann et al., 1999; Shifren et al., 2008), fatigue (Nimbi et al., 2018), sexually transmitted diseases (STD) (Laumann et al., 1999) and obesity (Selvin, Burnett, & Platz, 2007; Weber et al., 2013). Furthermore, for men, a number of psychological correlates such as stress (Laumann et al., 1999), depression (Araujo, Durante, Feldman, Goldstein, & McKinlay, 1998; Laumann et al., 1999; Nimbi et al., 2018; Polland, Davis, Zeymo, & Venkatesan, 2018), body dissatisfaction (Carvalheira, Godinho, & Costa, 2017), and sexual victimisation (Laumann et al., 1999) have been linked to poorer sexual outcomes, as have lifestyle factors such as smoking (Selvin et al., 2007), excessive alcohol use (Weber et al., 2013), low educational attainment (Laumann et al., 1999), and a deterioration in economic status (Laumann et al., 1999). Finally, although relationship factors are generally considered to be less important for males than for females in terms of sexual dysfunction, relationship status (C. A. Graham et al., 2017) and relationship duration (Carvalheira et al., 2014) have consistently been found to relate to low sexual desire for both genders.

Sexual dysfunction is multifaceted and highly variable, yet it has consistently been found to relate to biological factors such as age (Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Hendrickx, Gijs, & Enzlin, 2015; Laumann et al., 1999), and menopausal status (Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Shifren et al., 2008), as well as general poor health (Öberg & Sjögren Fugl-Meyer, 2005; Richters, Grulich, Visser, Smith, & Rissel, 2003), having a STD (Laumann et al., 1999), thyroid problems (Atis et al., 2010; Pasquali et al., 2013; Shifren et al., 2008), fibromyalgia (Burri, Lachance, & Williams, 2014), arthritis, urinary incontinence, and inflammatory

or irritable bowel disease (Shifren et al., 2008). Psychological problems are regularly found to be related to FSD and include anxiety and depression (Eplov, Giraldi, Davidsen, Garde, & Kamper - Jørgensen, 2007; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Polland et al., 2018; Shifren et al., 2008), body dissatisfaction (Carvalheira et al., 2017), and earlier traumatic sexual events (Laumann et al., 1999). Lifestyle factors have also been linked to FSD, with a greater likelihood of FSD found in women who are less educated (Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Laumann et al., 1999), postmarital (divorced, widowed or separated)(Laumann et al., 1999), and who have had children (Witting et al., 2008). Of particular importance for this thesis, are relationship factors such as low relationship and sexual satisfaction (Brezsnyak & Whisman, 2004; Carvalheira, Brotto, & Leal, 2010; Dennerstein, Koochaki, Barton, & Graziottin, 2006; Goldhammer & McCabe, 2011b; C. A. Graham et al., 2017; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Laumann et al., 1999; Witting et al., 2008) that have been shown to be related to sexual dysfunction in women. Additionally, female partners of males with sexual function problems have been shown to score lower on measures such as the Female Sexual Function Index (FSFI) than those whose partners are sexually healthy (Clayton et al., 2010; Jiann, Su, & Tsai, 2013). Although this list of risk factors for sexual dysfunction is far from exhaustive, it indicates the importance of viewing sexual dysfunction problems through the lens of a biopsychosocial model (Kingsberg et al., 2017; McCabe, Sharlip, Lewis, Atalla, Balon, Fisher, Laumann, & Lee, 2016; Nimbi et al., 2018).

Sexual Dysfunctions within the Relationship Context

Increasingly, the importance of relationship factors is being highlighted and researched, with the aim of increasing our understanding and treatment of sexual dysfunction. In fact, it has been suggested that when sexual problems arise, there can

be a cyclical nature to the couple's distress associated with it (Traeen, 2008), whereby relationship dissatisfaction aids the development of dysfunction, and the dysfunction itself develops and maintains increased conflict and distress in the relationship (Metz & Epstein, 2002). This is a pattern seen commonly by clinicians, and sits neatly within the circular model of sexual response put forward by Basson described above (2000), whereby an individual's relationship functioning and satisfaction may be involved in the development, maintenance, and therefore treatment, of sexual difficulties.

Relationship satisfaction has been found to be associated with sexual dysfunction across multiple studies (Brezsnyak & Whisman, 2004; Burri et al., 2011; Carvalheira et al., 2010; Dennerstein et al., 2006; Goldhammer & McCabe, 2011b; C. A. Graham et al., 2017; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Laumann et al., 1999; Witting et al., 2008) and is considered to be present in the development of sexual dysfunction in many cases. When individuals are asked why they believe their sexual difficulties have arisen, relationship difficulties are the most commonly perceived cause (King et al., 2007). In a qualitative interview study, women were found to be less concerned with achieving sexual satisfaction through intercourse for themselves, than they were about having an orgasm for the sake of their male partners (Nicolson & Burr, 2003). Exploratory and confirmatory factor analyses of 104 items (developed by participants) found that common reasons for engaging in sexual activity included to share pleasure, energise the relationship, learn about each other, manage conflict, as an incentive, to express anger, and to control the partner, with only a couple of individual motivations (e.g., to de-stress) noted (Shaw & Rogge, 2017).

Research suggesting the importance of the relationship context when considering sexual dysfunction and the distress associated with it, lends support to a model created by Marita McCabe put forward to explain the development of sexual

dysfunction within the context of relationships (Figure 3). The model proposes that at the beginning of a relationship, each individual brings into it a wide range of characteristics that have developed from their family of origin and combined with the individuals' life experiences. These factors determine how both partners evaluate the other (attributions), react within the relationship, and attempt to influence the relationship. Some of the negative reactions may serve to develop and maintain the dysfunction, as well as block attempts to improve or resolve the sexual difficulties they are experiencing (McCabe, 1991).

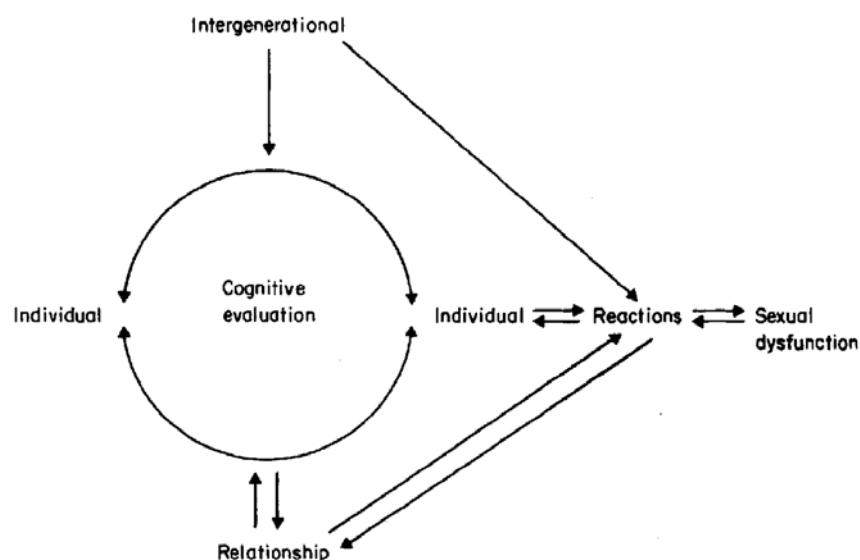


Figure 3. McCabe's model of sexual dysfunction within a relationship.

Overall therefore, it would seem that there is both empirical and theoretical literature highlighting the importance of viewing sexual dysfunction within the couples context. As will become evident throughout this thesis, a couples focus to sexual dysfunction more generally, and sexual desire and the distress associated with it more specifically, is crucial to gain our best understanding of sexual difficulties and achieve optimal treatment outcomes.

Chapter Summary

This chapter has outlined the fundamental models of sexual function that underpin our understanding of normal sexual function and help us to understand the various sexual dysfunctions. It has also provided an overview of the nature of sexual disorders, including a brief discussion of their prevalence and risk factors. As highlighted in this chapter, problems with sexual functioning are common, highly varied, and associated with a large range of potential risk factors. The next chapter, Chapter 2, focuses specifically on sexual desire, and provides a deeper understanding of this highly prevalent problem by describing the construct and its diagnosis in detail.

CHAPTER 2 – SEXUAL DESIRE DISORDERS: DIAGNOSIS

The construct of sexual desire has been investigated and written about since as early as the Bible: Proverbs 5:18-19 “Let your fountain be blessed, and rejoice in the wife of your youth, a lovely deer, a graceful doe. Let her breasts fill you at all times with delight; be intoxicated always in her love.” In the psychological literature, however, sexual desire was first discussed by Freud, and for many years our understanding of sexual desire and dysfunction was limited to his psychodynamic theories and techniques. Subsequently (and as outlined in Chapter 1), Masters and Johnson (1966), followed by Kaplan (1979) and Basson (2000) and others, have outlined more contemporary and testable models of the human sexual response that include sexual desire. Although the Masters and Johnson / Kaplan models assume partners’ sexual interest, the Basson model clearly places sexual interest and desire as central to our understanding of sexual behaviour.

The construct of sexual desire itself is currently poorly understood within the literature. Sexual desire is considered to occur along a continuum of intensity from complete aversion to passion and contains multiple components such as drive (with biological underpinnings), motivation (individual and relationship driven), and wish (culturally driven) (Levine, 2003). In the most general sense, desire (of any type) is considered to be a psychological state of wanting or needing to have an object, to feel a certain way, or to be doing a certain thing that will sate current appetite (Regan & Berscheid, 1999). The term sexual desire speaks to the desire to experience sexual fulfillment of any kind, individually or partnered, and with or without orgasm as the goal. It has been said that sexual desire (an appetite for sexual activity), to some extent, can be compared with hunger (an appetite for food) (Bancroft, 2010).

Cognitive awareness that one is hungry sets off a series of neuronal pathways forged through lifelong learning, such as when to feel hungry and what food to desire. This is similar to the pathways laid down through early sexual experiences and social learning about sex. These neuronal pathways result in a cascade of physiological changes (e.g., salivation in the case of hunger and genital sensations for arousal) that assist us to both attend to food / sexual stimuli and prime the body for eating food or engaging in sexual activity. Internal cues (such as strong emotion or illness), as well as environmental cues (such as the smell of food or presence of an available sexual partner), can modify our cognitions and behaviours in the seeking of food or sex. For instance, an individual can be unaware of their hunger until they walk past a bakery and smell hot bread, thus triggering thoughts about food and an awareness of emptiness in their stomach. Similarly, an individual may not consciously experience sexual desire until their partner arrives, triggering thoughts or memories about sex. Such awareness will then increase the likelihood that the individual will enter the bakery and buy something to eat, or to initiate sexual activity with their partner. Once the hunger / sexual desire has been satiated, the individual returns to their original pre-hunger state, or as it is known within the sexual response literature, the refractory period. Although physical hunger can be used as a metaphor for sexual desire to a certain extent, the cognitions, physiological changes, internal and external cues, and resulting behaviours relating to sexual desire, are much less understood.

Sexual desire "has long been recognised as a rich, confusing tangle, in which biological drives, sociocultural meanings, formative individual experiences, and additional unknown factors play powerful roles" (Baumeister, 2001, p. 95). Indeed, it is a complicated, multidimensional construct that include affective, cognitive, and motivational factors (Beck, 1995b). Yet, there has been little research conducted on the

construct of sexual desire itself. Indeed, the exact physiological, cognitive, emotional and behavioural mechanisms that create and interact with sexual desire, are not yet fully understood. When asked, individuals experience substantial difficulty describing how they understand and experience sexual desire (Brotto, Heiman, & Tolman, 2009). Instead, research focusing on the management of desire disorders has accelerated without a solid underpinning body of knowledge about the construct itself. An explanation of the cognitive, behavioural and physiological elements of desire as we currently (albeit poorly) understand them, will now be provided.

Physiology of Sexual Desire

Underlying sexual desire is a complex interplay of physiological mechanisms that serve to make sexual desire possible. It is difficult to describe the physiology of desire in isolation, as it is so intertwined with the other stages of sexual response. At the beginning of the sexual response is a release of steroid hormones, including norepinephrine and oxytocin, that lead to selective attention towards sexual cues. Dopamine and melanocortins assist with the stimulation of attention and desire as well as with the down regulation of inhibitory systems. Following sexual reward (often orgasm but also other rewards such as emotional closeness, enhanced sexual self-confidence etc.), endocannabinoids and serotonin begin the refractory period and a sense of satiation occurs (Pfaus, 2009).

The idea that there are separate but interacting systems for excitation and inhibition can be dated back to the work of Pavlov, and have been applied to our understanding of many neurophysiological processes. For instance, the dual-control model proposed by Bancroft (2009) posits that in both men and women there are normal variations in propensity for sexual excitation and inhibition, and that these variations may serve adaptive purposes. In women with and without sexual desire

problems, differences in the brain areas that mediate sexual desire, support our current understanding of the physiological processes (Bianchi-Demicheli et al., 2011). In men, it has been consistently demonstrated that sufficient androgens (testosterone in particular) need to be present for normal levels of sexual desire. However, evidence for a similar relationship between hormones and desire in women has been inconsistent (Bancroft, 1988).

Cognitive Elements of Sexual Desire

Historically, the cognitive element of desire was synonymous with sexual fantasy, although it has now been expanded to include many other internal sexual cues that may lead to sexual desire such as memories, awareness of physiological sensations, and consciously created thoughts about sex. Sexual fantasies or daydreams can occur during or outside of sexual activity, can be spontaneous or intentional, and may include any mental imagery that is arousing to the individual (Leitenberg & Henning, 1995).

A qualitative study by Goldhammer & McCabe (2011b) found several main themes associated with how women view the construct of sexual desire, and that women are highly individual in the ways they describe their experience. Women's thoughts were more often related to memories of past, and anticipation for future, sexual encounters. Thoughts relating to past and future encounters are an important aspect of the construct of sexual desire, but one that we currently know very little about in both women and men. Despite our minimal understanding, fantasy appears to be an important element of desire, with women who experience low desire fantasising less both during and outside of sexual activity (Nutter & Condrón, 1983). The quality of sexual cognitions seems also to be relevant, with positive (as opposed to negative)

sexual cognitions being significantly more predictive of better sexual adjustment (such as greater sexual satisfaction) (Renaud & Byers, 2001).

The importance of sexual cognitions was evident in a study by Regan and Bersched (1996) who questioned 142 undergraduate psychology students regarding their beliefs about sexual desire. It was found that both men and women generally described sexual desire as a subjective, psychological experience (98.5%) rather than as a physiological (4.4%) or behavioural (2.2%) state. One participant stated that "Sexual desire is the need or the want to have sexual intercourse with someone. It is a feeling that is totally uncontrollable, a desire" (p.115). In a similar study, although there was high agreement about what sexual desire is (Beck, Bozman, & Qualtrough, 1991), there was a statistically significant difference between what men and women believed to be the goals of desire. Whereas women were more likely to identify love and emotional intimacy or physical contact and closeness as goals, men were more likely to view sexual activity itself as a goal. Sexual cognitions are an important, yet poorly understood, aspect of the sexual desire experience, and an element that requires greater research focus.

Sexual cognitions are an important, yet poorly understood, aspect of the sexual desire experience, and an element that requires greater research focus. A unique research design by Regan (1998) involved presenting participants with fictional stories about a couple, and then asking for their beliefs about that couple. In the first experiment, stories about couples with either no desire or high desire (and no or frequent sexual activity) were presented. Participants felt that the couple who felt high desire for each other were more likely to be in love, happy, satisfied, committed to each other, and less likely to cheat than the couple with no desire. In the second experiment, the couples presented were either very or not in love with each other and

participants were asked to predict their levels of desire. They perceived the 'in love' couple as more likely to experience desire for each other. In the third experiment, couples with desire discrepancy were presented and, as expected, participants felt that the high desire member of the couple (regardless of gender) was more likely to feel romantic love than the low desire partner. If this is how individuals and couples view the interaction between love and desire, it is to be expected that desire problems within a couple will be interpreted in highly detrimental ways.

Behavioural Expression of Sexual Desire

The behavioural aspect of sexual desire has been more thoroughly researched. Beneath our awareness, a reward system appears to underlie sexual behaviour, with a combination of instinct, learning and feedback providing a set of complex rules by which sexual behaviour is more or less likely to be initiated. The introduction of sexual stimuli, combined with individual neurophysiological processes, determines whether further sexual stimuli are sought. Interpretation of these stimuli then results in differing behavioural responses to it (Bancroft, 2010). When desire-related behaviour is rewarded, it is more likely to continue until the individual reaches a point where the desire is satiated. After the satiation of desire, inhibitory systems stall the reactivation of sexual desire (Pfaus, 2009). For example, if a woman's partner initiates sexual intercourse, creating in her a feeling of sexual desire and causing her to engage in sexual behaviour, this may result in her feeling sexually satisfied and emotionally closer to her partner, leading to a greater likelihood that she will respond similarly the next time he initiates. However, if the same circumstances leave her feeling dissatisfied and uncared for, she will find sexual behaviour aversive and be less likely to either feel sexual desire or to respond with sexual behaviour next time. From a behavioural prospective, then, if desire-related behaviour is experienced as aversive in

some way, or is not rewarded in some way, then extinction of sexual behaviour is likely to occur.

The behavioural elements of sexual desire remain ill-defined. However, there has been some investigation into the frequency of sexual desire. In a study of 329 healthy, partnered women aged between 18 – 73 years, it was found that 15.1% reported no desire for intercourse, 25.8% preferred intercourse less than weekly, 50.5% at least weekly, and 8.3% desired daily intercourse (R. C. Rosen et al., 1993). However, a striking difference has been found between males and females, with one study finding that 51.4% of men experienced sexual desire at least daily, while the same was true for only 7% of women (Beck et al., 1991). A slightly lower, yet still large, disparity occurs when measuring desire for sexual activity with a partner (as opposed to desire for masturbation, fantasy etc.), with 23% of men desiring to have sex daily or more often, compared to only 8.3% of women (Rissel, Richters, Grulich, Visser, & Smith, 2003). Indeed, in a large-scale twin study, it was found that although men and women desired similar levels of kissing and petting, men generally desired a higher frequency of all other sexual activities than did women (Santtila et al., 2007).

A large-scale representative study of couples in the United States found that on average, respondents had sex 6.3 times per month, and in couples under the age of 30, intercourse occurred on average 2-3 times per week (Call, Sprecher, & Schwartz, 1995). Similarly, an Australian study found that individuals across the lifespan who were within a relationship that was of longer than 12 months duration, had sex an average of 1.84 times per week (Rissel et al., 2003). As such, although many men (and some women) desire sex with a partner daily, they tend to only experience partnered sexual activity once or twice a week. The studies described above therefore indicate a

disparity between the frequency of sexual desire, and the frequency of engaging in sexual activity.

In addition to a disparity between desire and actual sexual activity, it would seem that it is not necessary for desire to be present prior to engaging in sexual activity, as 82% of females and 60% of men participate in sexual activity without desire (Beck et al., 1991). In fact, in a large-scale survey of 3,687 women investigating the relationship between desire and engaging in, or initiating, sexual activity with their partners, (Carvalheira et al., 2010) found that the majority of women engaged in sexual activity without desire occasionally or most of the time. In fact, only a small proportion of women (15.5%) engaged in sexual activity only when they felt sexual desire. In regards to initiating sexual activity, 72.3% of women reported only sometimes being the instigator, and there was a negative relationship between initiating and relationship length, such that the longer the relationship duration, the less often women tended to initiate sex.

If so many individuals report engaging in sexual activity without experiencing any desire, what are their reasons for doing so? The reasons appear to be many and varied, ranging from sexual (such as pleasure and reproduction), to emotional (such as expressing closeness and pleasing one's partner) (Leigh, 1989). In a questionnaire study of 249 college students (Carroll, Volk, & Hyde, 1985), striking differences were found between males and females with respect to their motivation for engaging in intercourse. Female participants were more likely to be motivated by emotional reasons and to require emotional involvement with the other person. In contrast, males were more likely to be driven by pleasure, required less emotional involvement or spinoffs, and were more likely to state that they would never neglect an opportunity to have sexual intercourse with someone. Despite these differences, some similarities

also emerged. Both genders reported that the most important aspect of sexual behaviour was feeling loved or needed, and there should be equal male / female initiation of sexual activity.

From the above discussion, it is evident that sexual desire and sexual activity are different constructs, and that the relationship between sexual desire and its behavioural expression is not simple. However, researchers have historically measured desire through frequency of sexual activity, with the assumption that if desire is present, it will lead to sexual behaviour. Goldhammer and McCabe (2011b) interviewed 40 partnered, heterosexual women, who reported that sexual desire could be pleasurable in and of itself, and that therefore, the initiation of sexual contact was not necessarily required when sexual desire was experienced. They also found that few women masturbated as a response to feeling sexual desire, and instead preferred sexual activity with their partner or to forego the satiation of their desire completely. Instead, masturbation appeared to meet different needs in these women, who used it as an aid during partnered sexual activity, to relax or sleep, or to relieve boredom. It would seem, therefore, that there are many factors other than sexual desire that can have an impact on sexual behaviour, and that frequency of sexual behaviour is a poor proxy for the construct of sexual desire.

Gender Differences

It is evident from the prevalence literature that there are consistent differences in rates of male and female sexual desire problems. The research to date has consistently focused on prevalence and frequency, finding that men are more likely to have frequent sexual desire, with more spontaneous thoughts about sex, a higher frequency and variety of sexual fantasies, greater desire for a larger number of sexual partners, and more frequent masturbation (Baumeister, Catanese, & Vohs, 2001).

There are many reasons that male and female respondents might report different levels of sexual desire including, but not limited to, biological (e.g. oestrogens and androgens, menstruation, gestation and lactation, and menopause), social and cultural, evolutionary, and social desirability reasons (Leiblum, 2002). However, there has been little research to support these suggestions. In a systematic random sample of 844 respondents, a questionnaire investigating motivations for engaging in sex was administered (Leigh, 1989). It was found that heterosexual women were significantly more likely to have sex to express emotional closeness, while heterosexual men were significantly more likely to report engaging in sex for pleasure, to please their partner, or to relieve sexual tension. Interestingly, although the results showed that heterosexual men and women differed in the importance they attached to emotional and physical motives, these gender differences held true also with same-sex attracted participants, indicating that gender differences may be present across sexual orientation.

Despite the differences described above, there are other studies suggesting that male and female sexual desire is more similar than different. For instance, a twin population study of 3,604 Finnish twins aged 33 - 43 years found that although there were significant gender differences in desired frequency of particular behaviours across most areas measured (sexual fantasies, masturbation, oral sex, vaginal intercourse and anal intercourse), the pattern was similar such that both male and female participants most desired kissing and petting, followed by vaginal intercourse, oral sex and fantasies, masturbation and finally anal intercourse (Santtila et al., 2007). As expected when asked about actual frequencies of these sexual acts, there were fewer differences, as many of these physical acts require negotiation between partners. Of importance, the authors also measured dissatisfaction with the frequency of these behaviours and

found that men were significantly more dissatisfied with the frequency of all listed sexual acts, except for kissing and petting. This indicates that the discrepancy between the desire for sex and actual frequency of sex may be central to the distress experienced. An interesting experimental study with 24 men and 24 women showed erotic audiotapes, with a control condition designed to elicit situationally appropriate emotions and conditions designed to elicit anxiety and anger. It was found that for both men and women, anger and anxiety significantly reduced sexual desire compared to the control condition (Beck, 1995a). Although there were similarities on other dependent variables, there was a large difference in the number of women (79%) and men (21%) who reported that they would not have continued the sexual encounter in the anger condition.

Sexual Desire Discrepancy

Sexual desire discrepancy (SDD) is described as a difference in levels of desire for frequency of sexual activity between two partners in an intimate relationship (Zilbergeld, Ellison, Leiblum, & Pervin, 1980). Although research investigating desire discrepancy within the couple is sparse to date, findings support the idea that it is a couples-based issue. Sexual desire is known to fluctuate within the individual across their lifespan for a multitude of reasons, and therefore there is large variation in what constitutes 'normal' levels of desire. It is inevitable then, that when sexual relationships involve the synchronicity of two individuals with fluctuating or consistently different levels of sexual desire, there will be either transient or long-term periods of discrepancy with their interests in sex.

The paucity of research to date has shown that SDD significantly predicts sexual and relationship satisfaction for men only (Mark & Lasslo, 2018), and that SDD is associated with lower sexual (but not relationship) satisfaction in men and women,

particularly when women have the higher desire (N. O. Rosen, Bailey, & Muise, 2018). In same-sex relationships, it has been found that SDD is not necessarily problematic in and of itself (Bridges, 2007). However, compared to those participants who did not see the SDD in their relationship as problematic, those who perceived the SDD as problematic reported a lower frequency of sexual contact and less satisfaction with their sexual relationship.

The studies presented here may indicate that the impacts of SDD on sexual and relationship functioning may have more to do with individual, couple and societal expectations, than the SDD itself. This is evidenced by the above findings that same-sex couples do not necessarily find SDD distressing, that men and women experience SDD differently, and that the direction of the SDD matters.

Sexual Desire vs. Sexual Arousal

Historically, desire and arousal have been described as two separate 'phases' of a linear model of sexual response (Masters & Johnson, 1966). Despite all foundational research and treatment being conducted under this assumption, there is now some controversy around whether desire and arousal are distinct or overlapping experiences. Furthermore, the finding that the arousal phase differs greatly between men and women, has been a significant criticism of the linear model of sexual response (Basson, 2000).

Arousal has long been considered to be the second and physiological phase of the sexual response. Although there are many markers indicating when sexual arousal is occurring (e.g., vaginal lubrication for women and an erection for men), when measuring both vasocongestion (physiological arousal) and subjective arousal, women have been found to accurately report their level of physiological arousal at no higher than chance (Laan, Everaerd, Van Der Velde, & Geer, 1995). Perhaps because women

do not receive the immediate visual feedback of arousal that men do, they are unaware that they have entered this phase. It therefore appears that physiological arousal is an involuntary reflex outside of a woman's control that has little impact on her subjective experience of being aroused and desiring sexual contact (Basson, 2002; Laan et al., 1995).

Not only are researchers struggling to define and differentiate the constructs of desire and arousal, but female participants find it difficult to discriminate between the two (Goldhammer & McCabe, 2011b), and desire and arousal have been shown to correlate highly in both men ($r = .4423$) and women ($r = .5010$) (Beck et al., 1991). In a study involving 80 women across nine focus groups, not only did participants report a wide range of physical, cognitive, emotional and behavioural cues to indicate arousal, they also reported that sexual interest could either precede or follow arousal, and they struggled to understand the difference between the two (C. A. Graham, Sanders, Milhausen, & McBride, 2004). Similarly, a series of 32 semi-structured interviews found that participants had difficulty distinguishing between desire and arousal, that they differed in the order that they perceived arousal and desire to occur in, and that they reported variation in the extent to which the constructs were more physical or emotional (Mitchell, Wellings, & Graham, 2014). It is possible then, that arousal and desire may in fact be two necessary elements of a combined desire / arousal phase, a situation that has, in fact, been reflected in the major revisions to the diagnostic criteria evident in DSM-5 (American Psychiatric Association, 2013) that will now be discussed in more detail.

Sexual Desire Disorder

As we have seen, sexual desire is complex and multifaceted. Within the variability inherent to sexual desire, there are some individuals who experience what can be defined as a desire disorder. It is important to note at the outset, that most studies have focused on those who are coupled and heterosexual (Nimbi et al., 2018). There is also a paucity of literature relating to desire issues in males, individuals who are same-sex attracted, and those who do not identify as binary gender. Regardless, the research to date will be presented here, despite its shortcomings.

History of Sexual Desire Disorders

DSM-IV-TR. Given the confusion surrounding the construct of sexual desire and the lack of community norms, it is understandable that there has also been a great deal of change over time with respect to the diagnosis of sexual desire disorders. A disorder of sexual desire did not appear until the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980) when it was included as Inhibited Sexual Desire Disorder (ISDD). The DSM-I did not include sexual dysfunction at all, except for 'frigidity' and 'vaginismus' within the list of supplementary terms, and the DSM-II only included dyspareunia (C. A. Graham, 2016). When 'psychosexual dysfunction' was first included in the DSM-III, the sexual problems outlined followed the linear phases of the sexual response defined by the Masters and Johnson (1966) model. A disorder of sexual desire underwent a number of changes in the DSM-IV-TR (American Psychiatric Association, 2000), where it was named Hypoactive Sexual Desire Disorder (HSDD) (Figure 4). The most important evolution in that edition, was the addition of a distress criterion, requiring that the dysfunction caused marked distress or interpersonal difficulty (C. A. Graham, 2016).

Hypoactive Sexual Desire Disorder

- A. Persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning such as age and the context of the person's life.
- B. The disturbance causes marked distress or interpersonal difficulty.
- C. The sexual dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Figure 4. DSM-IV-TR criteria for Hypoactive Sexual Desire Disorder.

Criticisms of DSM-IV-TR Diagnostic Criteria. There has been much criticism of the DSM-IV-TR diagnostic criteria for HSDD. One problem was that the lack of a severity rating or time frame did not allow the clinician to make a distinction between a sexual desire disorder and a temporary sexual desire problem (Balon, Segraves, & Clayton, 2007; Beutel et al., 2008; C. A. Graham, 2016). It has been suggested that inclusion of a six-month duration criteria (as DSM-5 now includes) will reduce the prevalence of any sexual disorder from approximately 50% to 15.6% of women, and therefore reduce the incidence of misdiagnosis and overdiagnosis (Moynihan, 2003).

Another problem evident in DSM-IV-TR's criteria for HSDD was the monosymptomatic criterion A (highlighting the difficulties in defining the construct of sexual desire), and the requirement that clinicians define it for themselves with minimal literature or information to guide them. The specification that desire occurs in the form of fantasies and desire for sexual activity, did not take into account recent research suggesting that there are many other reasons for engaging in sexual activity, including the possibility of desire being responsive (Basson, 2000; Leigh, 1989). Any diagnosis of a desire disorder needs to be placed within the context of the large but normal range of an individual's desire across age, stage of life and relationship factors. The DSM-IV-TR required the clinician to judge whether the deficiency or absence of

desire was sufficient to diagnose the disorder within the context of that individual's life circumstances, again with a dearth of information available to them about the distinction between normal and dysfunctional levels of desire (Brotto, 2009; Heiman, 2002b). Thus, the clinician's decision that a presenting problem constituted a disorder, was somewhat arbitrary and idiosyncratic.

Normal vs. Disordered Desire. So what is a normal level of desire? The DSM-5 criterion D assumes that the assessing clinician has appropriate knowledge about the stressors that could otherwise explain the desire / arousal symptoms experienced by an individual. However, little research has been conducted on precisely what constitutes 'normal' desire and exactly which contextual factors may preclude a diagnosis. Furthermore, a reduction in sexual desire may be a normal, adaptive process in circumstances where there have been negative, stressful or physiologically damaging events (Frost & Donovan, 2015). Indeed, from an evolutionary perspective, it would not have been adaptive for an individual to have children (and engage in sexual intercourse) if they were experiencing poor health, had recently had another child, were unable to provide for a new child, or were within an unstable relationship.

DSM-5 Changes

The substantial changes from DSM-IV-TR to DSM-5 criteria for sexual desire disorders were the result of the consistent criticisms levelled at the diagnostic utility of the DSM-IV-TR's criteria for sexual desire problems, particularly for women. In the latest version of the DSM, it is no longer required that disorders be non-gendered, and criteria are no longer based on the linear sexual response model (McCabe, Sharlip, Atalla, et al., 2016). For men, despite much discussion, it was determined that due to the lack of information available (Brotto, 2010), the DSM-IV-TR criteria would remain largely unchanged, although the 6-month time criterion and specifiers were adopted for

male hypoactive sexual desire disorder (HSDD) in the DSM-5 (see Figure 5). For women, the criteria have changed significantly in the DSM-5, where it has been named female sexual interest / arousal disorder (FSIAD) (See Figure 6) (American Psychiatric Association, 2013). The changes relating to FSIAD have been made in order to deal with the difficulties in defining desire, the overlap between sexual desire and arousal, the low frequency of fantasy in women, and the understanding that the female sexual response is more in line with Basson's circular model, incorporating a more complex understanding of spontaneous vs. responsive desire. It must be noted however, that DSM-5 changes related to desire and arousal are controversial, and that members of the Fourth International Consultation on Sexual Medicine did not support the merging of desire and arousal disorders into one disorder (McCabe, Sharlip, Atalla, et al., 2016). It should also be noted that, despite substantial changes to DSM-5 criteria for sexual desire disorders, the modifications have been relatively recent, and that decades of research and literature have been based on DSM-IV-TR criteria for HSDD. Thus, until more recent research is published that includes the new diagnostic categorisation, DSM-IV-TR definitions and diagnoses largely continue to inform our understanding and treatment of desire disorders (Parish & Hahn, 2016).

Male Hypoactive Sexual Desire Disorder 302.71

- A. Persistently or recurrently deficient (or absent) sexual/erotic thoughts or fantasies and desire for sexual activity. The judgment of deficiency is made by the clinician, taking into account factors that affect sexual functioning, such as age and general and socio-cultural contexts of the individual's life.
- B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.
- C. The symptoms in Criterion A cause clinically significant distress in the individual.
- D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition.

Specify whether:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual function.

Specify whether:

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

Specify current severity:

Mild: Evidence of mild distress over the symptoms in Criterion A.

Moderate: Evidence of moderate distress over the symptoms in Criterion A.

Severe: Evidence of severe or extreme distress over the symptoms in Criterion A

Figure 5. DSM-5 diagnostic criteria for Male Hypoactive Sexual Desire Disorder.

Female Sexual Interest/Arousal Disorder 302.72

A. Lack of, or significantly reduced, sexual interest/arousal, as manifested by at least three of the following:

- 1) Absent/reduced interest in sexual activity.
- 2) Absent/reduced sexual/erotic thoughts or fantasies.
- 3) No/reduced initiation of sexual activity, and typically unreceptive to a partner's attempts to initiate.
- 4) Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (approximately 75% - 100%) sexual encounters (in identified situational contexts or, if generalised, in all contexts).
- 5) Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (e.g. written, verbal, visual).
- 6) Absent/reduced genital or nongenital sensations during sexual activity in almost all or all (approximately 75% - 100%) sexual encounters (in identified situational contexts or, if generalised, in all contexts).

B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.

C. The symptoms in Criterion A cause clinically significant distress in the individual.

D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress (e.g. Partner violence) or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition.

Specify whether:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual function.

Specify whether:

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

Specify current severity:

Mild: Evidence of mild distress over the symptoms in Criterion A.

Moderate: Evidence of moderate distress over the symptoms in Criterion A.

Severe: Evidence of severe or extreme distress over the symptoms in Criterion A

Figure 6. DSM-5 diagnostic criteria for Female Sexual Interest / Arousal Disorder.

As is evident from Figures 5 and 6, several factors must be considered when forming a diagnosis of sexual desire disorder in men and women. Desire disorders can be classified as 'due to psychological factors', or 'due to combined factors', as any desire disorder considered exclusively due to a medical condition or medication has a separate diagnostic label in 'sexual dysfunction due to a medical condition' or 'substance-induced sexual dysfunction'. It would not be usual to provide a diagnosis for sexual desire disorders if it was thought to be caused by (and does not precede), another mental health condition (Parish & Hahn, 2016). Desire disorders are also subtyped as lifelong, acquired, situational or generalised.

For women, changes in DSM-5 diagnostic criteria for sexual desire disorder include a combining of desire and arousal phases, the addition of a time criterion and the inclusion of specifiers such as the length of the disorder, whether it is generalised or specific to a particular partner or situation, and level of severity. A goal of these changes was to avoid pathologising the often normal and adaptive short-term fluctuations in female sexual functioning (Frost & Donovan, 2015) and to in turn, reduce the very high (and inflated) prevalence of female sexual dysfunction (FSD) (C. A. Graham, 2016). The inclusion within the DSM-5 of a 'lack of receptivity' indicator is important for women with healthy levels of responsive desire, making it possible to differentiate between women who have healthy responsive desire, and those with a complete absence of desire (Brotto, 2009). The use of the term 'interest' rather than desire in the DSM-5 criteria, concurs with previous studies finding that women engage in sexual activity for many reasons other than sexual desire, and may better allow for the many reasons women might either instigate or accept sexual activity.

Emerging research aiming to validate the new diagnostic criteria, has thus far found mixed results, and experts in the field have not yet reached a consensus position

on FSIAD (Kingsberg et al., 2017). For instance, a study testing the feasibility of the DSM-5 criteria found that neither DSM-5 nor DSM-IV-TR criteria fully met women's subjective experiences of sexual desire problems. Phone interviews of 114 female participants found that 75% of those who had sexual problems did not qualify for a DSM-IV-TR diagnosis, and that 92% did not qualify for a DSM-5 diagnosis, indicating that the changes to the diagnostic criteria have made it less likely for women with normal fluctuations in sexual desire to be labelled with a diagnosis (Sarin, Amsel, & Binik, 2013). Additionally, O'Loughlin et al (2017) found that in a sample of 151 women, only 73.5% of those with a HSDD diagnosis also met criteria for FSIAD. Individuals who met criteria for both disorders, had lower scores on sexual desire frequency and satisfaction, and higher scores on distress, while those who only met criteria for HSDD had mild symptoms. These findings suggest that changes to the DSM-5 criteria for sexual desire in women, have in fact met the goal of reducing prevalence and diagnosis of what may be normal and / or adaptive levels of sexual desire.

Chapter Summary

This chapter has outlined the construct of sexual desire including its physiological, cognitive and behavioural expression. It has also provided an overview of the literature describing the difficulties distinguishing between sexual desire and arousal. Finally, it has introduced the current and past diagnostic criteria for sexual desire disorders, while describing the changes within the DSM-5 and the criticisms leading to these shifts. The next chapter, Chapter 3 focuses specifically on the epidemiology of sexual desire problems.

CHAPTER 3 – SEXUAL DESIRE PROBLEMS: EPIDEMIOLOGY

This chapter provides an overview of the epidemiology of sexual desire problems. Included in this chapter is information regarding the prevalence rates, comorbidity, aetiology and risk factors associated with sexual desire problems. The risk factors outlined include age, psychopathology, individual and lifestyle factors, health factors, and relationship factors.

Prevalence.

Desire dysfunction and disorder are the most prevalent of the female and male sexual difficulties (C. A. Graham et al., 2017), occurring in 26% to 55% of the population (Shifren et al., 2008). It is important to note that this area is fraught with methodological flaws, and the literature on desire disorders in men is particularly sparse (McCabe, Sharlip, Lewis, Atalla, Balon, Fisher, Laumann, & Lee, 2016). Furthermore, (as already discussed) prevalence studies rarely distinguish between 'sexual dysfunction' and 'sexual disorder', using the terms interchangeably, despite the inherent differences between these constructs that were discussed in Chapter 1.

When considering sexual desire dysfunction prevalence studies alone, the rate of low sexual desire appears to be extremely high. The best known epidemiological study to date examining the prevalence of sexual desire dysfunction is the National Health and Social Life Survey (NHSLS) that employed a representative sample of 1,749 US women and 1,410 men aged between 18 – 59 years (Laumann et al., 1999). It was found that 43% of women endorsed a sexual dysfunction, with approximately three quarters (32%) reporting a lack of interest in sex (without measuring distress). For men, 31% endorsed a sexual dysfunction, with a smaller proportion lacking interest in sex (15%). In a similar Australian study, low desire in women (defined as lacking interest in having sex) was

reported by 54.8% of the female and 24.9% of the male participants in the first round of data collection (Richters, Grulich, Visser, Smith, & Rissel, 2003), and 51% and 27% respectively in the second round of data collection (De Visser et al., 2017). Most recently, the National Survey of Sexual Attitudes and Lifestyles (Natsal-3) found that 34.2% of women and 15% of men reported lacking interest in sex for more than 3 months of the previous year (C. A. Graham et al., 2017).

Due to the recency of the new FSIAD diagnosis in the DSM-5, there are yet to be published studies providing prevalence data on this disorder. However, the PRESIDE study described above in Chapter 1 (Shifren et al., 2008) investigated differences in prevalence between sexual dysfunctions and disorders. As described above, the PRESIDE study was a large population-based survey of adult females in the US (N=31,581) that asked women about the presence or absence of common sexual problems, and measured their distress using the Female Sexual Distress Scale (FSDS; Goldhammer & McCabe, 2011a). It was found that 44.2% of women endorsed the presence of a sexual problem, while only 22.8% reported personal distress. Furthermore, the prevalence of women with sexual problems and sexually related distress was only 12%, indicating that some women felt distress even without a sexual problem. Most epidemiological studies to date have not asked about distress (despite its necessity for diagnosis), and therefore the PRESIDE study is particularly useful and important.

As noted above, the research to date on prevalence rates of sexual desire dysfunction and disorders is fraught with methodological problems, reducing the confidence that can be placed in the results. In particular, there has been inconsistency in the construct definition and measurement of sexual problems, and there has been little consistency with respect to the inclusion / exclusion criteria of participants. The

differences across studies in terms of measurement of sexual problems was examined by Hayes et al. (2008), who measured female sexual desire in four ways: the Sexual Function Questionnaire (SFQ), the Female Sexual Distress Scale (FSDS), and two individual question items used in previous prevalence studies. It was found that prevalence rates varied between 16% and 58% depending on the measure used. The single-item questions were found to give significantly higher prevalence estimates ($p < .0001$) than multi-item scales. The SFQ alone suggested that 48% of women experienced low desire. However, when paired with the FSDS, only 16% experienced both low desire and sexual distress (i.e., sexual disorder). Similarly, McCabe (2013) assessed 741 women using a) DSM-IV-TR criteria, b) DSM-IV-TR criteria without the fantasy requirement, c) self-identification of a 'lack of sexual interest', or d) low average ratings of sexual desire on the Female Sexual Desire Questionnaire (FSDQ). It was found that prevalence of sexual desire problems ranged from 3% (full DSM-IV-TR criteria) to 31% (self-identifying as having a 'lack of sexual interest') depending on the criteria used.

As is evident from the above discussion, there are problems associated with the research to date in terms of prevalence of sexual desire problems. Despite the methodological inconsistencies however, it is clear that low sexual desire is highly prevalent in both men and women.

Comorbidity

According to Angold, Costello and Erkanli (1999), 'comorbidity' refers to the co-occurrence of two (or more) different disorders or diseases at a given point in time". There is a great deal of comorbidity amongst sexual dysfunctions, and although it is useful to define specific criteria for research purposes, in real life, overlaps between symptoms are common (Hartmann, Heiser, Rüffer-Hesse, & Kloth, 2002). It has been

found that there is greater comorbidity between sexual dysfunctions for women than for men (McCabe, Sharlip, Lewis, et al., 2016a), with comorbidity being the norm rather than the exception.

In a sample of Australian men (N=778) and women (N=772), it was found that 13.2% of men and 19.7% of women experienced more than 3 sexual dysfunctions (Najman, Dunne, Boyle, Cook, & Purdie, 2003). The PRESIDE study found that 52.5% of women with distressing low sexual desire also experienced a second or third distressing sexual problem (Shifren et al., 2008). Similarly, Rosen (2000) found high correlations between sexual dysfunctions, particularly between sexual arousal and sexual desire dysfunctions in women. Indeed, the comorbidity between sexual arousal and desire problems is particularly high, highlighting the difficulty that both men and women have in differentiating between the two (see Chapter 2). Hartmann (2002) found that, in their sample of 50 female patients presenting with low desire, 59% also reported problems with sexual arousal. Similarly, Dennerstein (2006) showed that, regardless of menopausal status, there was a strong positive significant relationship ($p < 0.001$) between sexual desire and arousal scores when using the Profile of Female Sexual Function (PFSF). For men, erectile dysfunction is the most common sexual disorder comorbid with distressing low sexual interest, being present in 48.7% of cases (Carvalho et al., 2014).

Aetiology of Sexual Desire Disorders

The aetiology of low sexual desire is poorly understood. Very few studies have examined potential causal factors, and longitudinal studies are yet to be conducted in order to establish temporal associations. Thus, aetiological determinants of low desire remain a relatively untapped area of empirical enquiry.

A number of studies have asked individuals to report on their perceptions / beliefs around the causes of their sexual desire problems. A qualitative study following Grounded Theory Methodology (GTM) asked women age 18 – 29 years to report on what they felt enhanced or inhibited their sexual desire (Murray & Milhausen, 2012). Four overarching themes emerged; personal factors, partner-related factors, relationship factors, and external factors. Within those themes, emerged 32 theoretically different factors (see Table 1) considered to inhibit sexual desire. The most commonly mentioned were: low energy level, not feeling sexy, low physical attraction to partner, low partner attentiveness, having less intimate communication, experiencing life transitions, and concern over the possibility of pregnancy. Not only do these factors suggest many potential causes of low desire, they also highlight the importance of viewing desire disorders within the relationship context. Indeed, relationship and partner factors were two of the four key overarching themes found in the data.

In another study investigating perceived reasons for low desire, Sims and Meana (2010) asked a sample of women who met criteria for HSDD about their attributions for loss of desire within their relationships. Three main themes were identified: institutionalisation of the relationship, over-familiarity, and de-sexualised roles. Although these themes appear different to those described by Murray, their subthemes (full list in Figure 7) were very relationship focussed as were those put forward by Murray. In particular, their study listed relationship-based factors such as; decline in self and partner care, multiple role incompatibility, lack of individuality, dissipation of romance, over-availability of sex, overly familiar sexual advances, and a de-eroticised concept of marriage.

Table 1.

Themes, sub-themes and categories associated with influencing women's sexual desire.

Theme 1: Personal Factors	Theme 3: Relationship Factors
Emotional State Physical State Stress level Energy level Feelings about self Feelings about self-worth Feelings about body Feeling sexy Ability to stay mentally present Attitudes towards sex Sexual particularity Perceived importance of sex in a relationship	Characteristics of relationship Intimacy Support from partner Characteristics of sex life Desire discrepancy Monotony and routine Time spent together Communication Sexual communication Intimate communication
Theme 2: Partner Factors	Theme 4: External Factors
Partner as cause of sexual desire Physical attraction to partner Partner makes woman feel desirable Aspects of partner's sexuality Partner's level of sexual desire Partner's comfort with sex Effectiveness of sexual initiation Partner's attentiveness Partner's effort Partner's lack of consideration	Setting Life transitions Received messages about sex Parental messages about sex Religion Health issues Medical problems Medications Possibility of pregnancy Other stimuli Alcohol Sexually explicit films

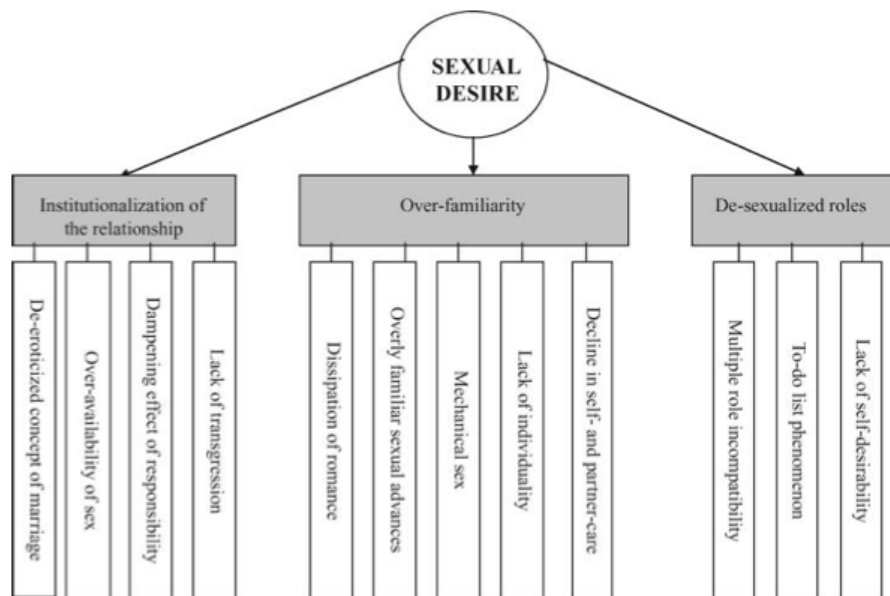


Figure 7. Women's causal attributions for their loss of sexual desire.

Consistent with the strong emphasis on relationship factors evident from the preceding studies discussed, a study conducted in Morocco by Kadri et al.'s (2002) found that women reported couple-level concerns as reasons for their sexual difficulties. Although not specific to low desire, women attributed the cause of their sexual difficulties to: conflict with their partner (92.9%), partner sexual dysfunction (90%), poor knowledge of their bodies (89.1%) and consequences of sorcery (82.3%), highlighting that there are both similarities and differences in beliefs about sexual disorders across cultures.

The studies described above included only female participants. However, using semi-structured interviews and grounded theory methodology, Murray et al (2017) have recently investigated factors that males in long-term relationships believe elicit and inhibit their sexual desire. The central themes that emerged regardless of age or length of relationship were: feeling desired, exciting and unexpected sexual encounters, intimate communication, rejection, physical ailments and negative health characteristics,

and lack of emotional connection with partner. This study indicates that male sexual desire is complicated and can be elicited and inhibited by similar elements to women, with relationship factors being particularly important.

As is evident from the above discussion of beliefs around low desire, relationship factors have been found to be of high importance. However, it is unclear whether these relationship concerns are a cause or a consequence of low desire in women, or whether a bi-directional association is more likely. Despite the apparent importance of the couple context in desire problems however, the majority of existing research investigating risk factors for low sexual desire, has focused on individual factors. There is therefore a strong need for future research investigating the aetiological factors influencing sexual desire, particularly within the context of a relationship.

Risk Factors for Low Sexual Desire. Numerous constructs have been investigated as potential risk factors for low sexual desire. The literature presented here is again fraught with methodological issues such as inconsistencies in measurement and the use of correlational analytic procedures. However, it is important to present the literature to date, and this section will provide information pertaining to the role of age, psychopathology, lifestyle, individual, health, and relationship variables as risk factors for low sexual desire.

Age. Across the limited research investigating factors related to low desire, age has been the most consistently studied. Overall, a linear relationship has been found, with increasing age predicting decreasing sexual desire (Beutel et al., 2008; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Laumann et al., 2005; Laumann et al., 1999; McCabe & Goldhammer, 2011; Lindau, 2007; McCabe & Goldhammer, 2012; Moreira et al., 2005). Although the decline in sexual desire can be seen across both genders, the decline appears to begin earlier in women (Beutel et al., 2008). In the Sex in Australia

study, women aged 16 – 19 years were significantly less likely than older women to lack interest in sex ($p=.003$) (Richters et al., 2003), and women aged 30 – 39 years were 20 times more likely than younger women to report a sexual dysfunction.

Interestingly, despite the increasing prevalence of low desire as women age, their distress levels have been found to decrease, suggesting that the prevalence of women able to be diagnosed with a desire disorder (requiring both low desire and distress) remains fairly stable across the lifespan (Dennerstein et al., 2006; Graziottin, 2007; Laumann et al., 1999). Furthermore, despite the aforementioned questionable relationship between levels of desire and frequency of sexual intercourse, increasing age also predicts lower intercourse frequency. Women under the age of 29 have been found to have intercourse almost twice as often as those in the 50 – 59 year age bracket (Rissel et al., 2003), and for both men and women, an issue for the frequency of sexual activity is the presence (or absence) of a sexual partner (Beutel et al., 2008). Thus, the impact of age on sexual dysfunction and desire is not as straightforward as first thought.

Psychopathology. Psychopathology such as anxiety and depression has been investigated in relation to low desire, although the majority of studies have focused on women, and the direction of causation remains unclear due to the correlational nature of much of the research. In a study comparing a group of 50 patients with low sexual desire with 100 sexually functional women, it was found that previous mood disorder occurred at almost twice the rate in those with low sexual desire than their matched normal desire controls (Hartmann et al., 2002). This supports an earlier study of 46 couples, which found that couples with low sexual desire were twice as likely to experience affective disorders as their matched controls (Schreiner-Engel & Schiavi, 1986). Similarly, it has been found that a diagnosis of depression correlates with lacking interest in sex (OR 2.37, $p<.01$) (Moreira et al., 2005), and that low general happiness

predicts low desire, with a 2.61 odds ratio (Laumann et al., 1999). Furthermore, the PRESIDE study found that depressed women were 2.34 times more likely to experience distressing low desire than non-depressed women, and that anxious women were 1.49 times more likely than non-anxious women to experience distressing low desire (Shifren et al., 2008). Levels of sexual interest may also be linked to historical events such as child sexual abuse or having been sexually forced by a man, which significantly correlates with low desire for women (Beutel et al., 2008; C. A. Graham et al., 2017; Laumann et al., 1999).

The limited research including men, appears to follow a similar pattern. It has been found that for both men (adjusted odds ratio 2.95) and women (AOR 2.79) who screened positive for current depression and / or had been treated for depression in the past year (AOR: men: 2.92; women: 2.32), lacking interest in sex was more likely (C. A. Graham et al., 2017). Additionally, a large sample (N=5,255) online survey of men aged 18 - 75 years found that stress was the most frequently reported reason for lack of sexual interest (Carvalheira et al., 2014). Although the causal direction of the relationship between psychopathology and low sexual desire is unknown, the studies outlined here demonstrate that psychopathology should at least be considered more frequently in future research.

Individual and Lifestyle Factors. Individual and lifestyle factors have also been investigated with respect to their relationship with low sexual desire. Women who leave school at age 16 (AOR 1.31), are unemployed (AOR 1.44) (C. A. Graham et al., 2017), or who are low income (Beutel et al., 2008) are more likely to report ‘lacking interest in men’, while students and retirees are less likely to report lacking interest (C. A. Graham et al., 2017), and more educated women are less likely to experience difficulties with sexual desire (Kadri et al., 2002; Laumann et al., 1999; R. C. Rosen et al., 1993). In

addition, a decrease in household income of over 20% has been found to predict low desire (Laumann et al., 1999), and higher fatigue, greater stress, and having children have all been found to negatively correlate with sexual desire (Goldhammer & McCabe, 2011a; C. A. Graham et al., 2017; Laumann et al., 1999). In fact, the more children a woman has, the lower her sexual desire has been found to be (Witting et al., 2008), and one of the best predictors of low sexual desire is the lack of desire to have baby (Nimbi et al., 2018).

Culture and race also appear to be associated with low sexual desire. In the PRESIDE study, women were more likely to experience low sexual desire if they were Caucasian than if they were Black (Shifren et al., 2008). Meanwhile, the WISHES study found significant differences in the prevalence of low sexual desire across European countries, with lowest prevalence rates evident in France (21%), and higher rates in Italy (28%), the United Kingdom (34%), and Germany (36%) (Graziottin, 2007). Thus, there appears to be a range of individual and lifestyle related factors that impact upon low sexual desire.

Health Factors. Poor general physical health has been shown to correlate with low sexual desire in both men and women (C. A. Graham et al., 2017; Laumann et al., 2005; Laumann et al., 1999; Lindau, 2007; Shifren et al., 2008), as have a range of specific health concerns. For instance, it has been found that having ever contracted an STD, having difficulty walking upstairs, having a long-standing medical condition (C. A. Graham et al., 2017; Laumann et al., 2005; Laumann et al., 1999), having general low energy or fatigue (Nimbi et al., 2018), and having thyroid problems and urinary incontinence (Shifren et al., 2008), are all associated with lower desire. In fact, the number of comorbid health conditions a person suffers from has been found to significantly associate with reduced interest in sex for both men and women

(Goldhammer & McCabe, 2011a; C. A. Graham et al., 2017). There are also a number of correlates specific to women including menstrual cycle stage, pregnancy, and use of the contraceptive pill (Hartmann et al., 2002; Regan, Lyle, Otto, & Joshi, 2003; Witting et al., 2008). Finally, the relationship between menopausal status and sexual desire has received a great deal of empirical investigation, with results showing that desire tends to decrease when women are postmenopausal, or have experienced surgically induced menopause (Dennerstein et al., 2006; McCabe & Goldhammer, 2012; Shifren et al., 2008).

Relationship Factors. Many relationship and couple factors have been found to be associated with low sexual desire. In studies where both genders have been included, these associations have generally been shown to be stronger for women than for men (C. A. Graham et al., 2017). For instance, it has been consistently found that sexual desire decreases with the length of time a couple have been in their relationship. An important study by Hayes et al. (2008) found a linear negative association between desire and relationship length, up to a relationship duration of 30 years, after which sexual desire was found to increase slightly. Indeed, relationship duration has been associated with a lower frequency of initiating sex, lower satisfaction with own sexuality, and lower sexual satisfaction with the partner (Carvalheira et al., 2010). Interestingly, it has also been shown that when low sexual desire has been evident in a previous long-term relationship, the frequency of intercourse increases again when the individual begins a new relationship (Call et al., 1995), indicating that the overall negative association between relationship length and sexual desire cannot be explained completely by advancing age.

A number of other couple-based variables have been associated with low sexual desire, including low relationship satisfaction (Brezsnyak & Whisman, 2004;

Goldhammer & McCabe, 2011a; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Witting et al., 2008), and low sexual satisfaction with the partner (Dennerstein et al., 2006; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Laumann et al., 1999). The way a woman thinks about her relationship has been shown to affect her desire, with low expectations about the future of the relationship being associated with less interest in sex (Laumann et al., 2005). For both men and women, relationship status is related to lack of interest (C. A. Graham et al., 2017), with results of the PRESIDE study suggesting that women who are married or in a defacto relationship are 2.41 times more likely to experience distressing low desire than single women (Shifren et al., 2008).

Low desire has been shown to be associated with certain characteristics of relationships for both men and women. For instance, lacking interest in sex has been found to associate with greater communication difficulty, less happiness with the relationship, low levels of emotional closeness with the partner, and differences between partners in sexual likes and dislikes (C. A. Graham et al., 2017). Given the importance of relationship variables for understanding sexual desire, it is encouraging that this is an area of accelerating research focus.

Chapter Summary

This chapter has provided information on the prevalence rates, comorbidity and aetiology of sexual desire problems. It has also outlined the various risk factors for developing problems with sexual desire, with the caveat that the research to date is largely correlational in nature. The importance of relationship factors in the development of sexual desire problems was also highlighted. The next chapter, Chapter 4, will now go on to outline treatment options for individuals and couples who are experiencing distressing sexual desire difficulties.

CHAPTER 4 – SEXUAL DESIRE PROBLEMS: TREATMENT

Help seeking for general sexual dysfunction is low in both men and women, and problems with sexual desire are rarely inquired about by clinicians (Clayton, 2007). Thus, the number of individuals and couples seeking and / or receiving treatment is low. For example, it has been found that only 17% of women and 18% of men with sexual disorders have consulted healthcare professionals or ever presented for treatment of sexual problems, a small percentage when compared with the prevalence of these problems (Kadri et al., 2002; Moreira et al., 2005). Of those presenting, reasons such as wanting a satisfying sexual life (22%), being concerned about normality (80%), and feeling under pressure from their partner (78%) were cited (Kadri et al., 2002). The first hurdle in providing treatment is the private nature of these concerns, and the potential for the individual to feel shame, inadequacy and embarrassment (Parish & Hahn, 2016).

Treating sexual dysfunction symptoms alone does not always ameliorate the distress associated with it, and it is therefore crucial that distress itself is included as a treatment target (Hendrickx, Gijs, & Enzlin, 2016). Indeed, in a report for the College of Sexual and Relationship Therapists in the United Kingdom, Tabatabaie (2014) noted that clinicians conducting sex therapy are generally more concerned with the individual's reports of improvement in areas such as sexual confidence and intimacy with their partner than they are in restoring sexual function alone.

With respect to low sexual desire, there are unfortunately very few empirically validated treatments (Heiman, 2002a), and it has been considered notoriously difficult to treat by clinicians across psychology, psychiatry and gynaecology (Basson, 2002; Hartmann et al., 2002). The lack of available treatments is perhaps not surprising

given the limited knowledge about low desire as a construct, and whether it is in fact normative or non-normative in the first instance (Goldmeier, 2001; Meana, 2010). A systematic review and meta-analysis of psychological interventions for sexual dysfunction found that treatments for low sexual desire ‘have large effects on symptom severity’ (p.926) with an effect size of $d = 0.91$ (Frühauf, Gerger, Schmidt, Munder, & Barth, 2013). The review also reported that there are currently no studies comparing pharmaceutical and psychological interventions for sexual desire problems.

It has been suggested that given the biopsychosocial aetiological factors associated with low sexual desire, treatments should ideally be multifaceted (Parish & Hahn, 2016) and draw from multiple modalities and professional areas of expertise. Yet, as will become evident from the discussion below, an interdisciplinary multimodal approach is rarely taken. This chapter will introduce some of the literature pertaining to different treatment options for low sexual desire, including pharmacological treatment, sex therapy, cognitive-behavioural therapy, mindfulness, couples therapy and the International Society for the Study of Women's Sexual Health (ISSWSH) guidelines for decision making in the treatment of low sexual desire in women.

Pharmacological Treatment

There has been an increase in research investigating effective medications available for sexual desire disorders over the past decade. Drugs such as bupropion (Segraves et al., 2001) and testosterone (Braunstein, Sundwall, & Katz, 2005) have been investigated with respect to desire disorders in the past, but are no longer the focus of current empirical interest. Although a thorough discussion of all drugs trialed for this purpose is beyond the scope of this thesis, both Flibanserin (Parish & Hahn, 2016; Stahl, Sommer, & Allers, 2011) and Bremelanotide (Clayton et al., 2016; Portman, Edelson, Jordan, Clayton, & Krychman, 2014) will be discussed, as they are

the most commonly used, and most empirically investigated, pharmacological interventions currently available.

The most investigated medication has been Flibanserin, an agent that acts as a 5-HT_{1A} receptor agonist and 5-HT_{2A} receptor antagonist (Parish & Hahn, 2016; Stahl et al., 2011). Flibanserin was initially developed as an antidepressant medication, and although found to be ineffective for this purpose, it was shown to have pro-sexual side effects (Anderson & Moffatt, 2018). It is thought to influence female sexual desire by decreasing serotonin activity (suppressing sexual inhibition) while also increasing dopamine and norepinephrine activity (excitatory pathways) (Parish & Hahn, 2016). Despite the emphasis placed on finding a medical solution to low sexual desire, Flibanserin has so far been found to have a positive yet minimal impact on only a small number of trial participants. For instance, a recent meta-analytic study examining ten published and unpublished studies, found no significant differences between Flibanserin and placebo groups across most measures of sexual desire and distress (Saadat et al., 2017). An earlier meta-analysis reported statistically greater increases in sexually satisfying events, sexual desire, overall sexual function and reduced sexually-related distress among those using Flibanserin compared with placebo (Gao, Yang, Yu, & Cui, 2015), while a meta-analysis of unpublished randomised controlled trials (RCT's) found an increase of only 0.5 sexually satisfying events per month and a significant increase in the risk of dizziness, somnolence, nausea and fatigue (Jaspers, Feys, & Bramer, 2016). The SUNFLOWER study (Jayne, Simon, Taylor, Kimura, & Lesko, 2012) found that whilst the results of their RCT examining the efficacy of Flibanserin reached significance, total scores on the FSDS-R reduced from 24.5 at week 4 to 19.9 at week 52, and therefore remained well above the clinical cut off of ≥ 15 for this measure of desire problems (DeRogatis, Clayton, Lewis-D'Agostino,

Wunderlich, & Fu, 2008). Despite the less than stellar demonstrations of efficacy, Flibanserin has now been approved in Canada and in the United States by the Food and Drug Administration (FDA) for the treatment of low sexual desire in premenopausal women, a decision that remains controversial (Anderson & Moffatt, 2018; Brotto et al., 2017; Parish & Hahn, 2016).

Bremelanotide acts in the same way as a naturally occurring peptide (Pfaus, Giuliano, & Gelez, 2007), and has been shown to increase behaviours in female rats normally seen in sexually appetitive gestures (Pfaus et al., 2007). Bremelanotide has shown efficacy in premenopausal women with a primary diagnosis of HSDD when self-administered subcutaneously prior to anticipated sexual activity (Portman et al., 2014). However, it has not yet been approved by the FDA and therefore not approved for use in the United States of America. Women in the treatment group reported a mean of 2.8 additional satisfying sexual experiences (SSE) for the trial month in comparison to the placebo group who experienced a mean of +0.2 additional SSEs per month. The women in the Bremelanotide condition also reported improvements on the Female Sexual Function Index (FSFI) total score, as well as the desire sub-scale score when compared to baseline. However, adverse side effects were seen in as many as 71.8% of participants, in comparison to 50.6% who received placebo. This has been replicated in a follow-up RCT of 327 women, which found that despite mild side-effects such as nausea, flushing and headaches, Bremelanotide was effective, safe and mostly tolerated by premenopausal participants (Clayton et al., 2016).

The approval of sildenafil by the FDA provides hope for future research investigating treatments for female sexual dysfunction. However, pharmacological treatments such as Flibanserin and Bremelanotide require further investigation. As reviewed above, the real world effects of the treatment, while statistically significant,

are not necessarily clinically meaningful, and their long-term efficacy is currently unknown. Therefore, although pharmacological treatments may form part of a treatment plan for some women, nonpharmacological treatments are required for women who have psychological or couple-based factors contributing to their low sexual desire, and those who cannot tolerate these medications due to drug interactions or other medical conditions (Brotto et al., 2017).

Sex Therapy

Sex therapy is often used as a 'catch all' phrase to describe any form of talking therapy relating to sexual activities, and is a focused form of counselling or psychotherapy that is often conducted by clinicians from a variety of backgrounds. It is used to address problems of sexual functioning, is usually attended short-term by either the individual or the couple, and is generally understood to include psychoeducation, couples counselling, and activities such as sensate focus (Kingsberg et al., 2017). Sensate focus was developed by Masters and Johnson (1970) and is considered effective in decreasing anxiety and increasing confidence, knowledge and connection through graded exposure to sexual activities (Parish & Hahn, 2016). A meta-analysis of studies using sexual skills training (including sensate focus) for women with HSDD, found an effect size of 1.03 for symptom severity and 0.86 for sexual satisfaction (Frühauf et al., 2013). Sensate focus is now rarely used as a treatment in isolation, but is still used regularly as a component of treatment when warranted.

Cognitive Behavioural Therapy

Cognitive behavioural therapy (CBT) has been used for women with low desire, with positive effects that have been maintained at follow-up (Hurlbert, White, Powell, & Apt, 1993). Hurlbert et al. conducted orgasm consistency training with the goal of

improving orgasm attainment. Orgasm consistency training is a largely behavioural approach whereby participants are introduced to the techniques of directed masturbation and sensate focus over ten, 2-hour sessions. Participants were assigned either to women only (WO), couples only (CO), or waitlist groups (WL). While the WO and CO groups both reported a significant improvement in sexual desire post-treatment as a side-effect of the treatment, the WL group did not. Of particular interest, was the finding that the CO group experienced significantly greater improvements in sexual desire than the WO group, with the pattern of results still evident at 6-month follow-up ($p < .01$).

In another study, Trudel et al. (2001) conducted a 12-week, 2-hour group CBT plus homework treatment for couples in which the woman was experiencing HSDD. The treatment comprised of a combination of psychoeducation, intimacy exercises, sensate focus, communication skills training, cognitive restructuring and sexual fantasy training. Following treatment, 74% of women no longer met diagnostic criteria for HSDD, and 64% continued to be diagnosis free at 1-year follow-up. Despite failing to meet diagnostic criteria for HSDD however, only 28% of women felt they were symptom-free following treatment. An online CBT program for low sexual desire incorporating psychoeducation, cognitive restructuring and fantasy training, has also been trialled (Veerman & Schnorr, 2012). The results were impressive, with large effect sizes for both sexual desire ($d = 1.11$) and distress ($d = .64$). It must be noted however, that the small sample ($N=8$) was unrepresentative of the average woman with low sexual desire, as they were all young (20 - 31), unmarried, students, who did not have children and who were satisfied with their relationships. Further research is required to investigate whether these findings can be replicated in populations more typically experiencing problems with sexual desire.

Mindfulness

Most recently, mindfulness-based cognitive sex therapy has received significant attention and appears promising. The mindfulness approach aims to train the individual's attention to the physical cues of their arousal, and hence aid their subjective arousal and desire while also helping to manage negative judgements and other cognitive distractions (Brotto, 2017). Brotto and Basson (2014) conducted a group trial of the mindfulness approach over four sessions and found that the treatment group experienced increased sexual desire with an effect size of $d = 0.97$. Compared to the delayed treatment control group, they found that treatment significantly improved sexual desire, sexual arousal, lubrication, sexual satisfaction, and overall sexual functioning. In this study it cannot be ignored, however, that both the treatment and wait list groups experienced similar rates of distress decline, indicating that it may not be the treatment itself that leads to a reduction of distress. These findings have been supported in another recent study of 26 women diagnosed with FSIAD that found significant improvements in desire, sexual distress, and satisfaction after taking part in an 8-session mindfulness-based program (Paterson, Handy, & Brotto, 2017). Despite the positive results introduced here, the mechanisms of change for mindfulness-based interventions have not yet been examined (Brotto, 2017). Furthermore, it has been noted that the majority of research in this area is uncontrolled and that RCTs are therefore required (2017).

Couples Therapy

As noted above, the sexual desire literature has historically focused on female desire disorders and largely ignored relationship factors that may be involved (Metz & Epstein, 2002). However, this situation is beginning to change, although couple therapy research remains in its infancy. Women have been found to report that

emotional outcomes such as enhanced intimacy with their partner are the most important components of their sex life (Thomas, Hamm, Hess, Borrero, & Thurston, 2017). Interestingly, low relationship satisfaction is theorised to be both a predictor and an outcome of sexual desire problems such that low relationship satisfaction may lead to reduced sexual desire and low sexual desire may lead to reduced relationship satisfaction (Davies, Katz, & Jackson, 1999). Considering sexual desire at the couple level allows the desire problem to be seen as relational and situational in nature, and avoids the person with low desire being pathologised and labelled as dysfunctional (Davies et al., 1999; Tiefer, 2001).

The importance of treating sexual desire with the couple present was highlighted in the Hurlbert et al (1993) study already described, where participants were allocated into either women's only (WO) or couples only (CO) groups. With no other alterations to treatment, it was found that the CO group reported significantly higher sexual desire and sexual satisfaction at 6-month follow-up. Hirst & Watson (1997) conducted a retrospective study of case-notes of 830 consecutive referrals to a psychosexual clinic. They found that when all sexual dysfunctions were considered together, the most significant predictor of treatment outcome was whether or not the patient's partner attended. Positive results were found in 84% of patients with partners, and only 51% of patients with partners who did not attend. The most common presenting problem of couples who both attended was female sexual desire, despite erectile dysfunction being the most prevalent sexual problem within these referrals. In another study, Minuchin's (1974) structural family therapy approach was applied to couples in which either the male or female experienced low desire (Fish, Busby, & Killian, 1994). Although a direct measure of sexual desire was not included, the authors found a significant reduction in the discrepancy between the amount of sexual behaviour desired by each

partner and actual frequency of sexual activity, as well as a reduction in relationship and sexual distress.

Emotion Focused Therapy (EFT) (Halchuk, Makinen, & Johnson, 2010; Johnson & Greenberg, 1985; Wiebe et al., 2017) with couples has shown significant pre, post and follow-up gains in terms of female low sexual desire and depression, despite the intervention not specifically targeting these problems (Macphee, Johnson, & van Der Veer, 1995). EFT is a couples therapy that works within an attachment framework. It has the goal of helping partners to see their interactions as a negative cycle and to ultimately become securely attached with each other to enable the development of a strong relationship foundation (Greenberg & Johnson, 1988). EFT strategies include placing the sexual response within an attachment framework, restructuring the emotional bond, focusing on positive sexual moments, helping couples to understand each other's erotic cues and sexual desires, processing any past sexual traumas, and consolidating newfound sexual intimacy (Johnson, Simakhodskaya, & Moran, 2018). Studies have found that it is the perceived discrepancy in desire that is associated with sexual and relationship satisfaction in both members of the couple (Sutherland, Rehman, Fallis, & Goodnight, 2015), regardless of whether the lower desire partner meets clinical diagnosis (Davies et al., 1999). It makes sense then, that the only treatment specifically proposed for SDD at this stage, is a couples therapy (EFT) (Girard & Woolley, 2017).

A treatment approach using EFT targeting desire issues was developed by Gehring (2003) and tested with two case studies. While working within the EFT framework, the researchers used Basson's Sexual Response Cycle (BSRC: Figure 2) as a psycho-educational tool for tracking couples' cyclical attachment pattern. Using the BSRC, the therapist assisted the low desire member of the couples to make behavioural

changes that increased their interest in sexual contact, and helped them to discover their underlying attachment needs and focus on their needs for emotional intimacy. Although these case studies show promise, a much larger controlled treatment trial is required to determine its effectiveness.

ISSWSH Guidelines

It is likely that a combination of treatment approaches based on a thorough and holistic conceptualisation, will be optimal in treating low sexual desire problems in both men and women. The process of care (POC) algorithm for management of low sexual desire in women has been developed with a panel of 17 cross-discipline health professionals by the International Society for the Study of Women's Sexual Health (ISSWSH) (Clayton et al., 2018). The POC guidelines (Figure 8) outline techniques for the assessment and formulation of low sexual desire in women. Depending on the specific patient presentation and history, suggested treatment options include pharmaceutical, physical therapy, psychological and lifestyle interventions. Once these factors have been addressed, treatment options can also include sex therapy such as CBT, mindfulness, behaviour therapy, and / or couples therapy, as well as pharmaceutical or hormonal intervention, to target the low sexual desire itself. The ISSWSH guidelines highlight the importance of a thorough assessment and formulation for individualised management of low sexual desire, as well as the need for a team of treating professionals from different specialisations who are willing to work together using the biopsychosocial model to provide a holistic treatment response.

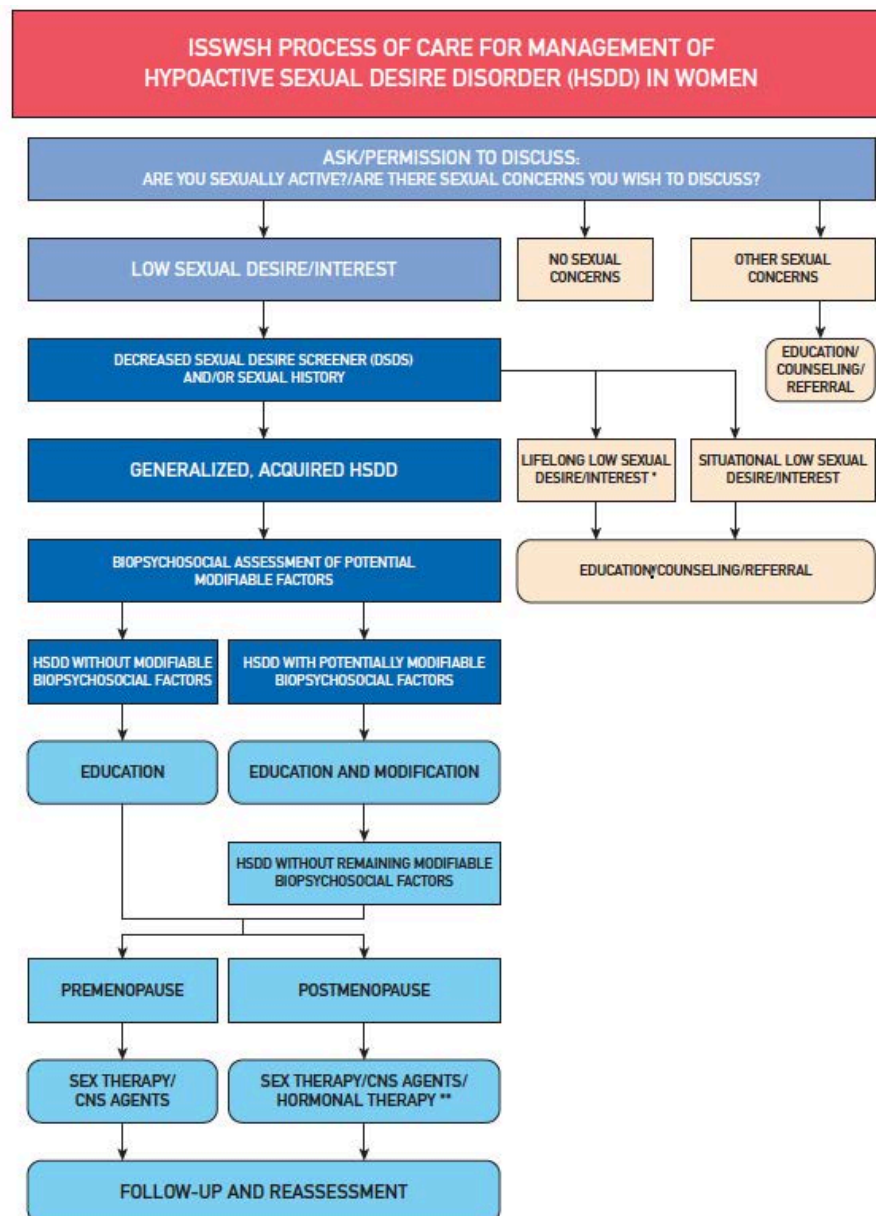


Figure 8. The ISSWSH process of care for managing low sexual desire in women.

Chapter Summary

This chapter has introduced the common treatment approaches for low sexual desire. As is evident from the discussion above, treatment studies to date have been strongly focused on low sexual desire in women, with little research being conducted on the effectiveness of treatment for low sexual desire in men. Problems with low

sexual desire have historically been treated individually using a combination of psychoeducation, cognitive-behavioural strategies, sex therapy and mindfulness but it is increasingly being seen as a difficulty that is best treated within the couples context. The ISSWSH guidelines provide guidance for clinicians to determine the best treatment options for the individual / couple and highlight the importance of a multi-modal approach to this complex and multifaceted problem.

CHAPTER 5 – SEXUAL AND RELATIONSHIP DISTRESS

Sexual distress is a negative emotion occurring in the presence of problems, or perceived problems, with sexual functioning and can include worry, anxiety, frustration and feelings of inadequacy (Hayes, 2008; Stephenson & Meston, 2010b). As noted above, the presence of clinically significant distress is a requirement for the diagnosis of HSDD and FSIAD (American Psychiatric Association, 2013), and allows for differentiation between disordered sexual desire and the normal fluctuations of sexual functioning (Balon et al., 2007). Given the necessary presence of both desire dysfunction and distress to diagnose a desire disorder, we know surprisingly little about how it is experienced by individuals and their partners when low sexual desire becomes problematic. In particular, few studies have been conducted to investigate the experience of sexual distress in men. Subsequently, little is known about the factors that predict whether an individual will experience distress around their desire dysfunction or not, and little is known about the impact of that distress on the partner. Although it makes intuitive sense that sexual distress is associated with low sexual function (including low desire), studies have found this relationship to be weak (Shifren et al., 2008). Instead, sexually-related distress is often absent even when sexual desire is low, and present when sexual desire is within the normal range (Stephenson & Meston, 2012a). Thus, it would seem that there are factors extraneous to the actual sexual experience that contribute to the distress (or lack of distress) felt about low desire.

Stephenson et al. (2012a) have undertaken the most comprehensive research to date investigating the consequences of, and distress related to, female sexual dysfunction. The participants included 75 women over the age of 18 years who were

in a heterosexual relationship and who had experienced a sexual dysfunction within the past month. Participants reported that the consequences of their sexual dysfunction included decreased pleasure, disruption of sex, decreased frequency of sexual activity, decreased partner pleasure, negative partner self-emotions, partner disappointment / sadness, and partner anger / frustration. Of particular interest, was that the frequency with which a participant reported a consequence occurring did not necessarily relate to the amount of distress caused by this consequence. For instance, the most frequently reported consequence was experiencing less physical pleasure during sex, while the least frequently reported consequence was the partner expressing anger towards the participant during or after sex. In terms of the distress associated with these consequences however, the least distressing consequence was decreased physical pleasure and the most distressing consequence was the partner expressing anger.

Desire-specific distress was investigated by Dennerstein et al (2006), who found that women with low desire were significantly more likely than women with normal desire to report negative emotions and psychological states such as being unhappy, concerned, disappointed and inadequate. The most frequently endorsed item, 'I was letting my partner down', was reported by 90% of women as a consequence of low desire. Further highlighting the relationship element of desire related distress, Traeen (2008) conducted a qualitative investigation of the experience of reduced sexual desire, including participants' perceived causes and consequences. The sample consisted of 18 women and 4 men, making it the first study to investigate the distress men feel about their desire problems. Participants reported that low desire affected them emotionally, altered their self-esteem, and damaged their relationships. Some example quotes are included below. Of note, is that in each of these statements, the

individual mentions their partner, either as part of the problem, or as a victim of their own low desire.

"I get aggressive ahead of time..... I'm angry with him because he goes on and on, putting pressure on me" p.65

"I feel that in her eyes, I fail. I feel I have to perform twice as much next time" p.67

"I feel it creates a distance between us. I'm very focused on what he is doing. If he starts to act romantic I panic' p.70

"The feeling of not being normal. I don't feel I'm as good a man as I should be. I'm thinking more about how she perceives this than how I do. That's the worst thing. It has a lot to do with duty" p.75

Risk Factors of Sexual Distress

Although sexual distress has not been well researched to date, a number of risk factors for its development have been put forward. Age is one variable that has been repeatedly investigated with respect to the distress associated with low sexual desire (Dennerstein et al., 2006; Shifren et al., 2008; Stephenson & Meston, 2012b). The PRESIDE study found that among women with low desire, those who reported distress were on average ten years younger than those who were not distressed (Shifren et al., 2008). Furthermore, in a study investigating the impact of menopause, it was found overall that as women aged, both their levels of sexual desire and their distress around

it, weakened. Women who reported the most distress were those for whom level of sexual desire most deviated from their expected levels of desire, i.e. women who were either premenopausal or who had undergone surgical menopause at an early age (Dennerstein et al., 2006). Overall therefore, it may be said that the limited evidence available suggests that distress around sexual desire problems reduce as women age (Graziottin, 2007; Hendrickx et al., 2015; Laumann et al., 1999).

A number of other variables have also been found to be associated with distress due to low sexual desire, including sexual dissatisfaction (Hendrickx, Gijs, Janssen, & Enzlin, 2016), chronic pain (Burri et al., 2014), race, use of hormone therapy, a history of urinary incontinence, a history of anxiety and / or depression (Shifren et al., 2008), and obsessive-compulsive symptomatology (Burri et al., 2011). In fact, depression may be a particularly strong predictor, with Hayes et al. (Hayes, Dennerstein, Bennett, Sidat, et al., 2008) finding that after controlling for 13 other variables, the presence or absence of depression was the only variable associated with sexual distress (OR = 3.1). In addition, it has been found that general emotional well-being is a much stronger predictor of sexual distress (not desire-specific) than physical aspects of female sexual response such as arousal, lubrication and orgasm (Bancroft, Loftus, & Long, 2003). Furthermore, openness to new experiences and extraversion appear to be protective factors (Crisp et al., 2013), and sexual distress has been shown to have a heritability of 44% (Burri et al., 2011), suggesting that personality and genetics may also play a role.

Being in a relationship is another risk factor for sexual distress that is of particular relevance to this thesis. Having a current partner increases a woman's chances of feeling distress about their low desire by 4.63 times (Fugl-Meyer & Fugl-Meyer, 2002; Lonnée-Hoffmann, Dennerstein, Lehert, & Szoek, 2014; Shifren et al., 2008), and 'having a partner' was the strongest independent correlate of distress related

to low sexual desire in the PRESIDE study (Shifren et al., 2008). Interestingly, relationship factors have also been found to be protective (Bois et al., 2016), with higher intimacy (Stephenson & Meston, 2010b) and better communication of sexual needs (Hayes, Dennerstein, Bennett, Sidat, et al., 2008) found to negatively associate with sexual distress. In fact, one study found that intimacy and attachment anxiety moderated the association between sexual functioning and sexual distress in a sample of college-aged women (Stephenson & Meston, 2010a).

Measurement of Sexual Distress

A challenge put forth by the International Consensus Development Conference on Female Sexual Dysfunction (Basson et al., 2000), and echoed by the Third International Consultation on Sexual Medicine (Clayton et al., 2010), was for researchers to meet the urgent need for psychometrically sound measures of sexual distress. For researchers interested in drug treatment of sexual dysfunction, this is of utmost importance at present, as the Food and Drug Administration (FDA) in the United States of America now recommend that distress is measured in treatment trials, not only as an outcome measure, but also to ensure that participants are selected appropriately (Clayton et al., 2010). Furthermore, it has been recognised that although other outcome variables in sexual dysfunction studies can be measured using both patient report and objective measures, patient self-report is the only appropriate strategy for measuring sexual distress (Fisher et al., 2016).

In a recent review of measures of sexual distress, 17 were found in total, of which four were standalone questionnaires, and 13 were sub-scales within broader measures (Santos-Iglesias, Mohamed, & Walker, 2018). The review noted that there were many limitations associated with the current measures, that few could be used with both genders, and that some were specific to particular age groups or cancer

patients. It should also be pointed out here that although the constructs of satisfaction and distress are closely and inversely related and are often used and measured interchangeably in the literature, they do not describe the exact same phenomena. Stephenson et al (2010a) found that distress is more closely related to sexual functioning than satisfaction in a clinical sample, while satisfaction was more closely related to relationship variables in a non-clinical sample. Despite these differences however, few measures exist to measure sexual distress, and therefore measures of both distress and satisfaction are included here in this literature review.

The only commonly used measures that are specific to sexual distress are the Female Sexual Distress Scale (FSDS; DeRogatis et al., 2002) and the revised version (FSDS-R; DeRogatis et al., 2008), the male version of the FSDS (SDS; Santos-Iglesias, 2018)), and the Sexual Desire Relationship Distress Scale (SDRDS; Revicki et al., 2012). With respect to sexual satisfaction, measures include the Sexual Satisfaction Scale for Women (SSS-W; Meston & Trapnell, 2005), and the commonly used measures of relationship satisfaction that have items relating to sex, including the Dyadic Adjustment Scale (DAS; Spanier, 1976) and the Marital Satisfaction Inventory (MSI; Snyder, 1979). Each of these will be discussed in more detail below.

Sexual Satisfaction Scale for Women (SSS-W)

The Sexual Satisfaction Scale for Women (SSS-W; Meston & Trapnell, 2005) was developed to create a multifaceted measure of women's sexual satisfaction and distress. The 30-item measure includes five, 6-item domains: contentment, communication, compatibility, relational concern, and personal concern. The relational and personal concern subscales pertain specifically to distress, and include items such as 'I've disappointed my partner' and 'My sexual difficulties are frustrating to me'.

Respondents rate their agreement / disagreement on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

The SSS-W was developed across three phases, where initial items were based on existing literature and interviews with women diagnosed with sexual dysfunction. After factor analysis and refinement, the final measure was found to exhibit sound psychometric properties and the ability to discriminate between clinical and nonclinical samples. Internal consistency is good to excellent (Cronbach's $\alpha = 0.72 - 0.94$), test-retest reliability has been shown to be high across all domains ($r = 0.62 - 0.79$), and validity has been demonstrated using the Female Sexual Function Index (FSFI; R.C. Rosen et al., 2000). Unfortunately, much of the development and validation research was conducted with undergraduate student samples, with many women being young, single or in short-term relationships, and without sexual difficulties.

Although the SSS-W has shown validity and reliability over a large number of research studies, it has strengths and limitations. A benefit of this measure is the presence of five subscales that allow researchers to a) narrow down the aspects of satisfaction most important to the research question, and b) conduct a fine grained analysis of treatment satisfaction outcome. Unfortunately, this measure was developed only for use with women and has not been validated for non-heterosexual respondents. It therefore has limited use in relationship research, where distress is increasingly being seen as a dyadic concern.

Female Sexual Distress Scale - Revised (FSDS-R)

The 13-item Female Sexual Distress Scale - Revised (FSDS-R; DeRogatis, Pyke, McCormack, Hunter, & Harding, 2011) is a revised version of the original 12-item Female Sexual Distress Scale (FSDS), (DeRogatis et al., 2002), and is an industry-sponsored measure of sexually-related distress in women with sexual

dysfunction (Santos-Iglesias et al., 2018). Respondents are required to rate how often they have experienced distress over the past month in relation to each item on a 5-point Likert scale ranging from 0 (never) to 4 (always). Example items include ‘Worried about sex’, ‘Guilty about sexual difficulties’, and ‘Bothered by low sexual desire’. Items on the FSDS-R are summed to produce a total score that may range from 0 – 48, where higher scores indicate greater distress. The FSDS-R has been found to have good discriminant validity, high test-retest reliability, and a Cronbach’s alpha greater than .88 (DeRogatis et al., 2008). The scale has shown the ability to discriminate between individuals with and without female sexual dysfunction (clinical cut off ≤ 15), and is sensitive to therapeutic change (DeRogatis, 2015).

Due to the absence of an equivalent measure for men, the original wording of the instructions has been modified for use in some research studies (i.e., switching ‘women’ to ‘individuals’) so that the measure can be administered to both men and women (Brotto, Yule, & Gorzalka, 2015; Park, Villaneuva, Viers, Siref, & Feloney, 2011). Indeed, the factor structure of the FSDS has been upheld with a male sample, validity and reliability of the measure has been shown with men, and it is able to discriminate reliably between men who are sexually functional and dysfunctional (Santos-Iglesias, 2018). Another revision to the FSDS-R, the Female Sexual Distress Scale – Desire / Arousal / Orgasm (FSDS-DAO) was created to include questions specific to arousal and orgasm and has been found to be a valid and reliable measure when used in recent drug trials (DeRogatis, Edelson & Revicki, 2014).

The FSDS-R is currently the standard measure of sexual distress due to its many strengths, and has been used in a number of clinical drug trials for the treatment of low sexual desire (Giraldi et al., 2011). It is brief, psychometrically sound, and easy to use (DeRogatis, 2015), it is not specific to particular sexual dysfunctions or

conditions, and it can be used for both genders (Santos-Iglesias, 2018). However, it is not without limitations. The items for the original FSDS were developed by expert panel, and therefore may not be representative of the experience or wording used by women experiencing sexual dysfunction (Santos-Iglesias et al., 2018).

Dyadic Adjustment Scale (DAS)

The Dyadic Adjustment Scale (DAS; Spanier, 1976) is a widely used and trusted measure of the quality of marriage and similar dyads. The 32-item measure is divided into 4 sub scales: Dyadic Consensus, Dyadic Satisfaction, Dyadic Cohesion, and Affectional Expression. Although the DAS was not designed specifically to measure sexual functioning or distress, unlike the majority of relationship satisfaction measures, it contains two items that enquire specifically about sex: item 6 asks about the degree of agreement / disagreement between the respondent and their partner on 'sex relations', and item 29 asks whether 'being too tired for sex' has caused differences of opinions or problems in the respondent's relationship over the past few weeks. The DAS and revised versions have been used in a large number of research studies pertaining to sexual functioning and distress, despite not being designed for this use.

The original 32-item DAS has been shown to be a reliable and valid measure across many studies. Graham et al (2006) conducted a meta-analysis of 91 studies and reported consistently acceptable consistency across 128 samples and 25,035 participants. Furthermore, reliability estimates did not differ due to sexual orientation, gender, marital status or ethnicity across studies, and test-retest reliability for the total score and four sub scales were found to range from .70 to .95 (Carey, Spector, Lantinga, & Krauss, 1993). The DAS has been translated into multiple languages and has been used in hundreds of studies since its development.

The 14-item Revised Dyadic Adjustment Scale (RDAS; Busby, Christensen, Crane, & Larson, 1995) was created to address problems of the original version including its lengthy nature, and the fact it was designed to measure dyadic adjustment rather than marital satisfaction (Ward, Lundberg, Zabriskie, & Berrett, 2009). The resulting 14-item RDAS has 7 first-order and 3 second-order subscales. Respondents are required to rate each item on a 5- or 6-point Likert scale from 0 (never) to 5 (more often). The RDAS has been found to have acceptable model fit and internal consistency, with a Cronbach's alpha of .90 (Busby et al., 1995). The RDAS has now been used in a large number of research studies since its publication, and there are a variety of even shorter forms that have been developed including a 5-item version (Sabourin, Valois, & Lussier, 2005), a 7-item version and even a single-item version (Sharpley & Cross, 1982).

The DAS and its derivative were not developed for use within the context of sexual dysfunction specifically, yet have been used for this purpose many times. Indeed, the inclusion of only two items pertaining to the sexual relationship is insufficient for clinicians and researchers focused on measuring or reducing the distress experienced by individuals in relationships where sexual functioning causes concern. These limitations aside, the DAS and RDAS have been used successfully, and have been shown repeatedly to be psychometrically sound measures of dyadic adjustment.

Marital Satisfaction Inventory (MSI)

The original Marital Satisfaction Inventory (MSI; Snyder, 1979) was developed as a multidimensional measure of relationship satisfaction. It was developed from a pool of 440 true-false items designed to focus on specific areas of marital interaction. The initial development studies resulted in a 280 item, 11-subscale measure that

included: Conventionalisation, Global Distress, Affective Communication, Problem-Solving Communication, Time Together, Disagreement About Finances, Sexual Dissatisfaction, Role-Orientation, Family History of Distress, Dissatisfaction with Children, and Conflict over Childrearing (with the last two subscales administered only if the couple had children). With respect to sexual issues, the Sexual Dissatisfaction (SEX) subscale included items (e.g. 'My spouse sometimes shows too little enthusiasm for sex', and 'My spouse has too little regard sometimes for my sexual satisfaction') assessing dissatisfaction with the frequency or quality of intercourse or other sexual activity. The MSI showed strong psychometric properties, with individual subscales demonstrating a mean Cronbach's alpha of 0.88, an average test-retest reliability of 0.89, and the ability to discriminate between couples seeking therapy and matched controls (Snyder, 1979). Due to the large number of items and multifactorial nature of this measure, it lends itself to many clinical and research uses. However, it seems most suited as an assessment tool at the beginning of a course of therapy to formulate and guide treatment goals, rather than for use as a measure of sexual distress per se (Snyder, 1979).

A revised version of the MSI was developed in 1997 (MSI-R; Snyder, 1997) and consists of 150 items measuring both the nature and intensity of distress in a couple's interaction. The updated version includes two validity scales, has retained the global distress scale and SEX subscale, and has an additional ten subscales measuring specific aspects of a relationship. It has retained good reliability and validity, and the ability to discriminate between community and clinical samples (Snyder, 1997).

The MSI and MSI-R have some advantages for sex research over other couples measures as they have been validated in male and female samples as well as same-sex attracted couples (Means-Christensen, Snyder, & Negy, 2003). Furthermore, it is the

only commonly used couples measure to have a sub-scale dedicated to sexual dissatisfaction. The limitations of the MSI and MSI-R as a measure of sexual and relationship distress, however, are substantial. The measure is not freely available in the public domain, its length makes it impractical for most clinical and research uses, and the items are focused on dissatisfaction rather than distress. Thus, although psychometrically valid and reliable, it is not practical in many contexts and is not a good measure of sexual distress.

Sexual Desire Relationship Distress Scale (SDRDS)

The Sexual Desire Relationship Distress Scale (SDRDS; Revicki et al., 2012) is the only validated measure of both sexual and relationship distress associated with low sexual desire. The 17 items relate to both personal distress and distress associated with the relationship in the context of low sexual desire, and was designed only for use by women. Items are scored using a five-point Likert scale ranging from 0 (never distressed or bothered) to 4 (very often distressed or bothered), resulting in a total score ranging from 0 to 68. The SDRDS was developed following qualitative analyses of focus groups with 66 women with decreased sexual desire (Revicki et al., 2010).

The SDRDS has been shown to have strong psychometric properties, with a Cronbach's alpha of 0.97, good test-retest reliability with an ICC of 0.89, and strong convergent validity with the FSDS-R (Revicki et al., 2012). The SDRDS has also been shown to differentiate women with sexual dysfunction from those without.

Issues with Current Measures of Distress

This section has outlined a selection of commonly used measures of sexual and relationship distress. Despite the importance of measures for research, treatment outcome and clinical purposes, there are few options available. Although the measures described above have been shown to be psychometrically sound and have wide utility,

for the purposes of measuring distress in the context of sexual dysfunctions, they have limitations. The SSS-W and FSDS-R measure personal satisfaction and distress, but ignore the relational impacts of distressing sexual dysfunction. Meanwhile, the DAS and MSI were developed to measure relationship functioning and satisfaction and are not specific to sexual difficulties, with the DAS including only two individual items on sex relations, and the MSI containing a single 'SEX' subscale that assesses only dissatisfaction about frequency and quality of sex in an otherwise lengthy measure.

The need to ensure that measurement tools are based on qualitative interviews with patients and partners to ensure content validity has been noted (Hatzichristou et al., 2016). The recently developed SDRDS is the only scale designed to measure both personal and relationship distress and was developed using focus groups with a clinical population. However, it is limited as it is designed for use only with women who have low sexual desire. Furthermore, both the SDRDS and the FSDS-R have single factor structures, reducing their ability measure specific 'domains' of distress.

As research into distress is flourishing, it is anticipated that the measurement of distress will need to move beyond a single total score within outcome measures, and begin focusing on particular aspects of sexual and relationship distress as they are uncovered. It is suggested, therefore, that there is a need for a psychometrically valid and reliable measure of sexual and relationship distress developed for use across genders and sexual orientation, and available for use with any clinical presentation of sexual dysfunction in the individual, their partner or both members of the couple.

Section 1 Summary

This section has presented literature in relation to sexual dysfunctions with a focus on low sexual desire in particular, and its associated distress. Sexual dysfunctions are

complex and have many potential causes, therefore necessitating treatment that is multimodal with multiple individual and relationship targets. Low sexual desire in particular has been considered difficult to treat in the individual and more recently, it is being seen as a couples issue rather than an individual dysfunction. It is clear that sexual problems (including low sexual desire) are highly prevalent, can be distressing when they occur, and that is often the impact on the relationship that causes the most concern.

Sexual distress is presently an area receiving increasing research interest, yet there is a lack of psychometrically validated measures. Effective measures are of substantial importance, since it has become expected that treatment trials include sexual distress as an outcome variable. This section introduced some of the commonly used measures of sexual distress, relationship distress, and a new measure that is designed to measure both. It was suggested that there is scope for a deeper understanding of sexual distress within the context of relationships as it pertains to both men and women, as well as additional measures that assess both sexual and relationship distress together. Section 2 presents a series of papers based upon the literature presented in Section 1.

SECTION 2 – A SERIES OF RESEARCH STUDIES

**Chapter 6 - Low sexual desire in women: amongst the confusion, could distress
hold the key?**

**Chapter 7 - A Qualitative Exploration of the Distress and Consequences
Experienced by Women with Low Sexual Desire and their Partners in Long-Term
Relationships**

**Chapter 8 - The Development and Validation of the Sexual and Relationship
Distress Scale (SaRDS)**

Chapter 9 – Sexual and Relationship Distress Scale

Preamble

It is clear from the literature reviewed in Section 1, that sexual dysfunctions are highly prevalent, distressing and often difficult to treat. Distress is important to understand, as it not only provides us with an understanding of the human experience of sexual difficulties, but it is also a requirement within the DSM-5 for diagnosis of sexual disorders.

This section consists of 4 chapters, each of which contains a paper that has either been published, accepted for publication, or currently in submission. Given the dearth of research investigating sexual distress, and the largely individual focus of past research in this area, the papers included within this thesis aim to take a foundational approach and focus not only on the individual, but also on the partner and the relationship more generally.

Chapter 6 includes a paper (published in the *Journal of Sexual and Relationship Therapy*) that pulls together the literature on distress within the context of low sexual desire. It concludes that due to the circular nature of the female sexual response and importance of individual, lifestyle and relationship factors, the distress itself may hold the key to treatment-resistant low sexual desire.

Chapter 7 presents a qualitative study (currently under review with the *Journal of Sexual and Relationship Therapy*) that provides an in depth understanding of the distress and consequences experienced by women with low sexual desire and their partners. The aim was to determine whether participants' responses confirmed previous questionnaire-style research regarding the construct of sexual distress, while also examining whether a deeper explanation of the construct would emerge. Semi-structured interviews provided rich descriptions of cognitive, emotional and

behavioural impacts of low sexual desire to the self and the relationship. A number of themes emerged, with the most interesting result being the similarities between women with low sexual desire and their partners, indicating a universality to the distress experienced and the impact that dysfunction has on relationships.

Chapters 8 and 9 present two papers (accepted for publication in the *Journal of Sexual Medicine* and the *Handbook of Sexuality-Related Measures*), that describe the Sexual and Relationship Distress Scale (SaRDS) (Frost & Donovan, 2018). The creation of this new psychometric measure builds the foundation for future research on sexual distress, as well as the assessment of treatment strategies for sexual dysfunction. Building on the paper presented in Chapter 7, Chapter 8 describes the development and psychometric evaluation of the SaRDS, whilst Chapter 9 presents the scale itself as published in the *Handbook of Sexuality-Related Measures*. The SaRDS is unique in its ability to measure 14 themes of distress in men and women with sexual dysfunction, as well as that of their partners. The inclusion of relationship distress within the SaRDS marks a departure from the existing measurement of sexual distress as an individually distressing experience. Furthermore, the SaRDS' ability to measure the distress experienced by both the individual with sexual dysfunction and their partner, has important research and clinical utility.

CHAPTER 6

LOW SEXUAL DESIRE IN WOMEN: AMONGST THE CONFUSION, COULD DISTRESS HOLD THE KEY?

This chapter includes a published co-authored paper (Appendix S). The bibliographic details of the paper are:

Frost, R. N., & Donovan, C. L. (2015). Low sexual desire in women: amongst the confusion, could distress hold the key? *Sexual and Relationship Therapy*, 30(3), 338-350. doi:10.1080/14681994.2015.1020292

My contribution to the paper involved: initial concept; literature search and review of relevant research; and manuscript preparation.

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16/06/2018

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Abstract

With the DSM-5 recently released (American Psychiatric Association, 2013), there has been important debate as to what constitutes low sexual desire / low sexual interest in women and how best to operationalise this construct. A new set of diagnostic criteria have been included for women who present with concerns relating to their level of desire. However, inherent to the diagnosis of ‘abnormal’ or low level of sexual desire or interest, is the notion that there is a ‘normal’ or average level of desire. Given that low desire is present in as many as 55% of women, it is possible that variations in desire levels may be a normative response to life circumstances. Increasing desire level has traditionally been the focus of therapy when individuals and couples experiencing desire problems present for treatment. However, this goal has proven difficult to achieve. Recent research investigating the distress associated with low desire, rather than low desire itself, may encourage a new line of potential treatment targets to address distress, as well as improve relationship quality. This paper will highlight the gaps in our understanding of this construct, outlining the seminal research conducted within the field, and offering support for new directions of enquiry.

Keywords: Sexual desire, sexual dysfunction, sexual distress, sexual disorder, HSDD, FSIAD.

Women's Sexual Desire: What is normal?

Low sexual desire is an extremely prevalent experience for women, and a common reason for individuals and couples to present for therapy. This paper will highlight the gaps in our understanding of this construct, outlining the seminal research conducted within the field, and offering support for new directions of enquiry. It is not intended to be a systematic review of the literature; for a more comprehensive review please read Meana (2010). Rather, it is intended to provide an overview of the current literature on desire-related distress and suggest future research targets. Our limited understanding of sexual desire, together with the consequences of low desire, have culminated in desire disorders becoming known as notoriously difficult to treat. A greater focus on relationship factors, as well as minimising the distressing consequences of low desire, may lead to improved outcomes.

Our research into and understanding of sexual desire becomes even more limited when describing the experiences of those who identify as other than heterosexual and cisgender. Due to this historical absence of alternate voices, throughout this manuscript the focus will remain on heterosexual women who have formed the focus of past research. However, where original articles have used the term 'female', this will have been maintained so as not to alter the meaning of the original authors. It is also important to note that the majority of studies cited within this manuscript have been conducted within a Western context, and as such the limitations of this must be taken into consideration.

What is sexual desire?

Sexual desire, while a seemingly simple construct, has proven very difficult to define. Put most simply, desire is considered a psychological state of wanting or needing; to have an object, to be feeling a certain way, or to be doing a certain thing that will sate the current appetite (Regan & Berscheid, 1999). Despite this apparently straight-forward explanation, sexual desire has been described as a multi-faceted and confusing combination of biological, emotional, cognitive, social, affective, motivational, and other unknown factors (Baumeister, 2001; Beck, 1995). Unfortunately, and somewhat surprisingly, there has been little research conducted on the actual construct of sexual desire. Instead, investigations focusing on the treatment of desire disorders have accelerated without a solid underpinning body of knowledge about the construct of sexual desire itself.

Changes to the DSM Criteria

The first port of call for clinicians when describing and defining sexual desire disorders is to turn to diagnostic manuals. With the advent of DSM-5, the criteria for Female Sexual Interest / Arousal Disorder (FSIAD; Figure 1) has changed dramatically from DSM-IV to (HSDD; Figure 2). The changes from DSM-IV criteria were the result of criticisms, including those aimed at their utility. For instance, the lack of a specified time frame for symptoms did not allow the clinician to distinguish between a sexual disorder and a temporary sexual problem (Beutel, Stöbel-Richter, & Brähler, 2008). Furthermore, the mono symptomatic criterion A required clinicians to judge whether the deficiency or absence of desire was sufficient to diagnose the disorder within the context of that individual's life circumstances. Yet, there is a dearth of information

available about the distinctions between normal, healthy levels of desire and levels that constitute dysfunction (Brotto, 2009; Heiman, 2002a). As a result of these criticisms, there have been major changes in the description and criteria of sexual disorders within DSM-5. The diagnostic criteria for FSIAD now combines desire and arousal within one diagnostic category, reflecting the difficulties that exist in differentiating the two constructs. The word 'interest' rather than 'desire' is used, reflecting the multiple reasons women instigate or accept sexual activity that may occur outside of sexual desire in the sense that it was originally understood (i.e., as an appetite for sexual activity per se). The inclusion of a 'lack of receptivity' indicator is important and means that it is no longer necessary to diagnose women with healthy levels of responsive desire, and it is possible to differentiate between women who have healthy responsive desire, and those with a complete absence of desire (Brotto, 2009). The new criteria also specify a duration of 6 months, includes multiple symptoms, and importantly, highlights that the individual must be experiencing distress as a result of their low sexual desire.

Female Sexual Interest / Arousal Disorder

A. Lack of, or significantly reduced, sexual interest/arousal, as manifested by at least three of the following:

- 1) Absent/reduced interest in sexual activity.
- 2) Absent/reduced sexual/erotic thoughts or fantasies.
- 3) No/reduced initiation of sexual activity, and typically unreceptive to a partner's attempts to initiate.
- 4) Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (approximately 75% - 100%) sexual encounters (in identified situational contexts or, if generalised, in all contexts).
- 5) Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (e.g. written, verbal, visual).
- 6) Absent/reduced genital or nongenital sensations during sexual activity in almost all or all (approximately 75% - 100%) sexual encounters (in identified situational contexts or, if generalised, in all contexts).

B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.

C. The symptoms in Criterion A cause clinically significant distress in the individual.

D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress (e.g. Partner violence) or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition.

Specify whether:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual function.

Specify whether:

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

Figure 1. DSM-5 diagnostic criteria for Female Sexual Interest / Arousal Disorder.

Hypoactive Sexual Desire Disorder

- A. Persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age and the context of the person's life.
- B. The disturbance causes marked distress or interpersonal difficulty.
- C. The sexual dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Figure 2. DSM-IV diagnostic criteria for Hypoactive Sexual Desire Disorder.

Prevalence

Despite poor conceptualisation around the construct of sexual desire problems, it would seem that low desire is an extremely common experience, being present in up to 55% of females (Richters, Grulich, Visser, Smith, & Rissel, 2003; Shifren, Monz, Russo, Segreti, & Johannes, 2008). Lifetime prevalence rates have not been reported to date, nor has there been longitudinal studies investigating fluctuations in women's sexual desire over time. However, of the few studies that do exist, the reported prevalence rates vary greatly due to disagreement on the definition of desire, and differences in its measurement. For instance, few studies have taken note of the distinction between desire dysfunction (the presence of low desire with or without any associated distress) and desire disorders (the presence of low desire with associated distress).

One study that investigated the prevalence rates of both sexual dysfunction and disorders (not desire-specific), was the Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking (PRESIDE) study

(Shifren et al., 2008). PRESIDE was a large population-based survey of adult females in the US (N = 31 581) in which women were asked about the presence or absence of common sexual problems. Distress about sexual concerns was measured using the Female Sexual Distress Scale (FSDS; DeRogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). Although 44.2% of females endorsed the presence of a sexual problem (similar to previous studies), only 22.8% reported personal distress. Even more interesting, was that the prevalence of females with sexual problems *and* sexually related distress was only 12%. That 10.8% of females reported sexually-related distress without any sexual problems, indicates that it is almost as common for females to be sexually distressed in the absence of any reported sexual problems as it is for them to be sexually distressed in the presence of sexual problems. Similarly, Hayes et al. (2008) found that 48% of females experienced low desire, but only 16% experienced both low desire and sexual distress. Most recently, Hendrickx et al (2013) supported these results within their sample of 17 535 females. It was found that 19.3% of females experienced hypoactive sexual desire at a level above the clinical cut-off, yet only 10.3% reported concurrent distress. Interestingly, these results appear to also be true within the adolescent population, with approximately half of those who report a sexual dysfunction experiencing distress (O'Sullivan, Brotto, Byers, Majerovich, & Wuest, 2014). That such high proportions of women experience low desire, yet are not distressed as a result of it, warrants further investigation. In fact, it is possible that low sexual desire in and of itself, may not be nearly as problematic as the literature suggests.

According to the studies described above, between 12% and 16% of women experience a desire disorder, and up to 55% experience low sexual desire. Given that as

few as a quarter of women with low sexual desire experience distress, and that most disorders within the DSM are found in a far smaller percentage of the population, how do we justify calling this very common experience (in up to half of all women) abnormal? Even depression (one of the most common psychiatric disorders) has a 12-month prevalence of only 6.6% (Kessler et al., 2005). It would seem therefore, that desire disorders are either highly prevalent (apparently 12 – 16% of women), or they are over-diagnosed.

Aetiology of low desire

Despite the apparent high prevalence, the aetiology of low sexual desire is poorly understood and infrequently investigated. Across the limited research examining factors related to low desire, increasing age has been studied most (Hayes, Dennerstein, Bennett, Sidat, et al., 2008), with results generally indicating an inverse linear relationship between age and desire levels. In the Sex in Australia study, women aged 16 – 19 years were significantly less likely than older women to lack interest in sex ($p = .003$), and women in the 30 – 39 year age bracket were found to be 20 times more likely than younger women to report sexual dysfunction in general (Richters et al., 2003).

Despite not always reaching statistical significance, a definite pattern of decreasing desire with increasing age in women has been demonstrated across multiple studies (Beutel et al., 2008; Laumann et al., 2005; Laumann, Paik, & Rosen, 1999; McCabe & Goldhammer, 2012; Moreira et al., 2005; Schiavi, Schreiner-Engel, Mandeli, Schanzer, & Cohen, 1990). Interestingly, despite the increasing prevalence of low desire as women age, their level of distress associated with low desire paradoxically

decreases, suggesting that the prevalence of women able to be diagnosed with a desire disorder (requiring both low desire and distress) remains relatively stable across the lifespan (Dennerstein, Koochaki, Barton, & Graziottin, 2006; Graziottin, 2007; Laumann et al., 1999).

As might be expected, increasing relationship length is also related to lower sexual desire (Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Murray & Milhausen, 2011), as are other couple based variables, including low relationship satisfaction (Brezsnyak & Whisman, 2004; Goldhammer & McCabe, 2011; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Witting et al., 2008), and low sexual satisfaction with their partner (Dennerstein et al., 2006; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Laumann et al., 1999). The way that a woman thinks about her relationship can also affect her sexual desire, with low expectations about the future of the relationship being associated with less interest in sex (Laumann et al., 2005).

In addition to age and relationship variables, there are also numerous individual factors predictive of low sexual desire. For instance, low sexual desire has been associated with anxiety and depressive symptoms (Hartmann, Heiser, Rüffer-Hesse, & Kloth, 2002; Laumann et al., 2005; Moreira et al., 2005; Shifren et al., 2008), negativity about body image (Richters et al., 2003), low self-esteem, menstrual cycle stage, pregnancy, and use of the contraceptive pill (Goldhammer & McCabe, 2011; Hartmann et al., 2002; Regan, Lyle, Otto, & Joshi, 2003; Witting et al., 2008). Other individual physical correlates of low desire include having ever contracted a sexually transmitted disease, and having general poor health (Laumann et al., 2005; Laumann et al., 1999), as well as specific health concerns such as thyroid problems, urinary incontinence,

being postmenopausal, or having experienced surgically induced menopause (Dennerstein et al., 2006; McCabe & Goldhammer, 2012; Shifren et al., 2008).

Furthermore, lifestyle factors such as fatigue, stress, and having children have all been found to be correlates of low sexual desire (Goldhammer & McCabe, 2011; Laumann et al., 1999), and the more children a woman has, the lower her sexual desire has been found to be (Witting et al., 2008).

Despite extant research on the correlates of sexual desire problems, the mechanisms through which these factors relate to women's desire-related behaviour is poorly understood, due to both a lack of empirical investigation and conflicting results in the studies that have been conducted to date. That said, there is consensus in the literature that, when women feel sexual desire, it does not necessarily lead to behavioural expression of that desire and subsequent sexual activity (as is more commonly understood to occur in men). For example, Goldhammer and McCabe (2011) interviewed 40 partnered, heterosexual women and found that sexual desire could be pleasurable in and of itself, and that the initiation of sexual contact was not necessarily required when sexual desire was experienced. Also of note, is that women describe a variety of reasons for engaging in sexual activity, few of which involve what might be classically described as due to desire. For instance, it has been found that women sexually engage for reasons ranging from the sexual (e.g. pleasure, reproduction, and relief of sexual tension) through to the emotional (e.g. expression of closeness and pleasing one's partner) (Leigh, 1989; Meston & Buss, 2007). In fact, women have been found to more often engage in sexual activity for emotional reasons,

with the most important aspect of sexual behaviour reported to be that of feeling loved or needed (Carroll, Volk, & Hyde, 1985).

One line of thought is that low desire may actually be adaptive. From an evolutionary perspective, it may not make sense for an individual to attempt to procreate while unwell, under chronic stress, after having recently had another child, being unable to provide for a new child, or being within an unstable relationship. Furthermore, the far from exhaustive list of factors contributing to reduced desire described above, are all commonly occurring experiences within a woman's life. For instance, it is possible that reduction in sexual desire is normal as women age, as they are less likely to require sexual activity for partner bonding and procreation. Given that many of the factors that predict low sexual desire are frequently experienced life events, it is possible that low desire may in fact be a normal response to these stressors.

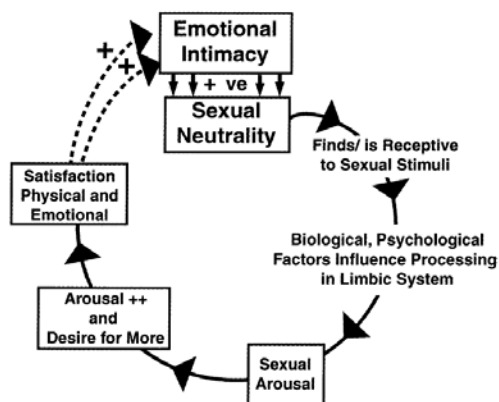


Figure 3. Circular model of the female sexual response, by Basson, R., 2002, *BJOG: An International Journal of Obstetrics & Gynaecology*, 109(4), p. 358.

Consistent with the idea that women are more likely to engage in sexual activity for emotional reasons and that reduced sexual desire may be an adaptive and / or normal

response to life stage, life events and relationship issues, Rosemary Basson's (2002) circular model of the female sexual response (Figure 3) emphasises women's motivations for sex, and is more intimacy and emotion-based than previously proffered. The model suggests that women may normally have a more 'responsive' than spontaneous style of sexual desire, with desire emerging in response to sexual arousal, and subsequently requiring the woman to be willing to sometimes engage in sexual activity before she is aware of desire. The sexual satisfaction and nonsexual rewards (such as emotional intimacy), that occur as the result of responsiveness, are reinforcing and may facilitate the recurrence of responsiveness (Meana, 2010). While this model is yet to face empirical scrutiny, it has garnered support within the field and suggests that individual, couple and environmental factors must be conducive for the cycle to proceed further. Certainly, in light of the many examined causes of low desire and the potential explanations of their impact, it seems that sexual desire in women is a highly complex and individual experience. A loss of, or reduction in, sexual desire appears to be a very common reaction to a large range of normative life events and phases, as well as a logical outcome to interrupted arousal and / or unrewarding sexual outcomes.

What is normal desire?

Given that a myriad of factors have been investigated with respect to low sexual desire, what do we know about normal or healthy desire? Unfortunately, the answer is precious little. When patients present for treatment concerned with their level of desire, how do we know whether or not their condition is abnormal? Diagnosis assumes extensive knowledge on behalf of the clinician regarding both normative and problematic levels of desire across the lifespan, within the context of a multitude of life

and health events. Even for the most experienced of clinicians, judgement is reliant on the time spent with individuals and couples previously presenting for treatment. Such patients represent an inherently skewed sample and judgements based on their experiences are not at all objective. In the absence of a body of knowledge around normal and problematic levels of sexual desire, researchers and clinicians have been forced to treat patients and research participants guided only by personal experience, consultation with other experienced therapists, and a few initial treatment studies.

Treatment for desire disorders

Women with low desire present for treatment either alone or with their partner, in the hope that their desire can somehow be reinstated to earlier levels, or can be increased to an intensity that they assume would be similar to other women. Increasing desire has therefore been the focus of the few treatment studies conducted to date. For most DSM-5 disorders, there is often a significant associated body of empirical and theoretical literature, leading to consensus around the formulation of a disorder and the subsequent evidence-based treatment of it. When it comes to disordered desire or disordered sexual interest and arousal however, the patient and clinician have few such guides.

There has been little controlled research investigating the treatment of desire disorders, and subsequently there are very few empirically validated treatments available (Heiman, 2002b). Furthermore, sexual desire has been considered notoriously difficult to treat by clinicians from many backgrounds, including psychology, psychiatry and gynaecology (Basson, 2002). The paucity of effective treatments for desire disorders is perhaps not surprising given the lack of knowledge about the

construct of low desire and whether it is in fact normative or problematic in the first instance (Goldmeier, 2001; Meana, 2010).

There are currently no clinically effective medications available for desire disorders. Of the multiple pharmacological studies conducted, the most investigated medication has been Flibanserin, that acts as a 5-HT_{1A} receptor agonist and 5-HT_{2A} receptor antagonist (Stahl, Sommer, & Allers, 2011). Despite the emphasis placed on finding a medical solution to low sexual desire, Flibanserin has so far been found to have a positive impact in only a small number of trial participants and where scores were published, the improvement from pre to post was minimal. For instance, in the SUNFLOWER study (Jayne et al., 2012), an extended trial, total scores on the FSDS-R reduced from 24.5 at week 4 to 19.9 at week 52, still well above the clinical cut off of ≥ 15 that is applied to this measure (DeRogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008). At this stage, medical management of low sexual desire is still unavailable.

Psychological treatment has had more success, with cognitive behavioural therapy (CBT) has shown small positive effects when compared with a control group, that have been maintained at 6-month follow-up (Hurlbert, White, Powell, & Apt, 1993). For instance, Trudel et al. (2001) demonstrated that a 12-week CBT group treatment for heterosexual couples in which the woman was experiencing HSDD was more effective than a wait-list control group, although only 28% of women in the treatment group felt that they were symptom free following treatment. Of most promise in individual treatment, has been the recent work of Lori Brotto and Rosemary Basson (2014) who conducted a controlled trial of group mindfulness-based cognitive sex

therapy with excellent results. After four sessions, the treatment group experienced increased scores on a measure of sexual desire ($d = 0.97$). Interestingly, both the treatment group and waitlist control group experienced a reduction in distress at a similar rate, indicating that the active mechanism with respect to reduced distress, was not the treatment itself.

Although under researched, there is some evidence to suggest that taking a couples approach to the treatment of desire disorders is beneficial. Hurlbert et al's study mentioned above allocated their sample into women's only (WO) and couples only (CO) groups, finding that the CO group reported more improvement than the WO group, with significantly higher sexual desire and sexual satisfaction being reported at 6-month follow-up (1993). Emotion Focused Therapy (EFT) with couples has also shown significant pre-, post- and follow-up treatment gains for women with low desire, despite the intervention not specifically targeting desire problems (Macphee, Johnson, & van Der Veer, 1995). EFT is a couples therapy that works within an attachment framework (Greenberg & Johnson, 1988) and for the purpose of the study, was conducted without any alterations specific to low desire. It was found that post treatment, 84% of the female participants had either recovered (36%) or improved (48%) on a measure of sexual desire towards their partner. Furthermore, a lessening of depressive symptoms was also found post-treatment, indicating that treatment may have also had a positive effect on desire-related distress.

The few existing treatment studies suggest that, although increasing a woman's desire levels has historically been a difficult task, there are other individual and couple variables, such as personal distress, relationship satisfaction and emotional symptoms

that may be potential treatment targets and may serve to in turn increase sexual desire. Indeed, the results from the EFT study indicate that improving relationship satisfaction may inadvertently increase sexual desire by removing a number of the couple factors known to be associated with low desire. The aforementioned difficulty treating this concern may support the notion that low sexual desire may not, in and of itself, be problematic, but rather may constitute a logical outcome to unfavourable contexts. Without a consistent body of literature and proven effective treatments, perhaps the goal should be to reduce the consequences couples face as a result of low sexual desire. Focusing treatment efforts on those contexts, including relationship difficulties and the distress couples experience as a result, could potentially prove more effective than focusing exclusively on low sexual desire itself.

Desire-related distress

Supporting the importance of relationship factors in the aetiology and treatment of low desire disorders, is the literature around desire-related distress. As previously mentioned, the presence of clinically significant distress is a requirement for the diagnosis of Female Sexual Interest/Arousal Disorder, and is an area of investigation that has recently received empirical interest. As already discussed, it is very common for women to experience low desire without feeling distressed, and it is also possible for women to feel distressed either with or without low desire (Hendrickx et al., 2013; Shifren et al., 2008). A possible explanation for the disparate effects of sexual functioning and distress, is that poor sexual function is experienced differently depending on many factors, including prior life and sexual experiences, cognitive attributions, partner reactions, misinformation, and coping styles.

Few factors have been investigated in relation to their impact on desire-related distress. However, as noted above, increasing age has been found to predict decreases in the distress about low sexual desire (Dennerstein et al., 2006; Graziottin, 2007; Laumann et al., 1999). A small number of other variables have also been found to relate to greater distress due to low sexual desire including the use of hormone therapy, history of urinary incontinence, history of anxiety, and depression (Shifren et al., 2008). Indeed, Hayes et al. (2008) found that after controlling for 13 other variables, respondents who reported that they were depressed were the only ones more likely to experience sexual distress (OR = 3.1). Recent research by Burri et al (2014) investigated the prevalence and risk factors of sexual problems and distress in women suffering from chronic widespread pain (CWP). Not surprisingly, their results indicated that women with CWP were significantly more likely to experience lifelong desire difficulty, as well as sexual distress. Within this study, it was also shown that in normal (non CWP) women, the strongest predictor of both low sexual desire and distress was the presence of relationship dissatisfaction.

Relationship factors have previously been found to be associated with distress around low desire, although it has largely been ignored in the literature in regard to aetiology and treatment. Having a current partner increases a female's chance of feeling distress about their low desire by 4.63 times (Shifren et al., 2008) and was found to be the strongest independent correlate of distress in the PRESIDE study. These findings were supported in an investigation of sexual function in 230 women in late menopause who reported that being sexually active or having a partner were associated with higher levels of sexual distress (not desire specific) (Lonnée-Hoffmann, Dennerstein, Leher, &

Szoeke, 2014). When scores on measures of sexual function (TSS) and sexual distress (FSDS) were combined, it was determined that sexual dysfunction was present for 23% of sexually active women, but only 7% of those who were sexually inactive. Similarly, 21% of women with a partner could be said to have sexual dysfunction, compared to only 4% of those who were un-partnered. Although this research contributes to a preliminary understanding of the factors related to desire-related distress however, very little is understood about the actual distress and consequences experienced by women who have low sexual desire.

Stephenson et al. (2012) have undertaken the most comprehensive research to date, investigating the consequences and distress caused as a result of female sexual dysfunction. The sample of 75 women over the age of 18 years reported a number of consequences of sexual dysfunction, including decreased pleasure, disruption of sex, decreased sexual frequency, decreased partner pleasure, negative partner self-emotions, partner disappointment / sadness, and partner anger / frustration. Of particular interest, was that the frequency with which a participant reported a consequence as occurring did not necessarily relate to the amount of distress caused by it. For instance, the most frequent consequence was experiencing less physical pleasure during sex, while the least frequent was the partner expressing anger towards the participant during or after sex. In terms of distress associated with these consequences however, the least distressing consequence was decreased physical pleasure and the most distressing was the partner expressing anger. This suggests that the distress experienced about sexual dysfunction (and possibly low desire specifically) might best be considered within a

relationship framework, and that current treatments aimed at increasing desire in the individual may not be targeting the couple factors that may actually be more important.

Summary and Conclusion

From the above discussion, it is evident that theoretical and empirical work relating to female sexual desire and distress remains in its infancy. The prevalence of low desire in women is high, although relatively few women with low desire are distressed by it. Research investigating the aetiology of low desire has pointed to increasing age, as well as a number of relationship factors and life events as being influential in the development of low desire.

For those who seek treatment, there has been minimal success in increasing level of sexual desire. There may be a number of reasons however, for why we so often fail in our treatment of this sexual ‘disorder’ of low desire. The high prevalence of the complaint suggests that experiencing low desire at some stage in life is a normative process, just as experiencing transient sadness is normative but depression is not. The idea that we require an alternative to the traditional medicalisation of female sexuality was suggested over a decade ago (Tiefer, 2001; Tiefer, Hall, & Tavis, 2002), with the suggestion that women’s sexual problems may often be normative and result from a number of factors including socio-cultural, political, partner, relationship and psychological wellbeing. When the many factors known to impact sexual desire are considered through a normative lens, it can be seen that they are commonly experienced life events (such as aging, parenthood, poor health), for which a reduction in sexual desire may well be adaptive. The majority of women experiencing low desire have not reported feeling distressed as a result, and it appears that when distress is reported, it is

commonly within the context of a relationship, a factor that must be taken into consideration in future research. Perhaps for many women, low desire is an adaptive response to stressful life events, but can become problematic due to the difficulties it causes within their relationships.

There are, of course, a percentage of women who have never experienced desire in their lifetime or whose level of desire is consistently low and causes distress even in the absence of life stressors. For those distressed by persistent and unexplained low levels of desire, treatment should of course aim to improve this experience for them. For the remaining women and couples presenting for treatment, however, maybe there is a better way? Is it possible that we are attempting to treat what is actually a normal phase of sexuality occurring in response to a number of factors? Until we know the answer to the many questions still unanswered about sexual desire, it may be more effective to instead focus on improving the sequelae and distress caused by desire problems. Further investigation into the distressing consequences of low desire experienced by both individuals and couples may inform future treatment targets. Furthermore, when considering the circular model of female sexual response put forth by Basson (2002), it is possible that in the process of improving a woman's emotional symptoms, sexual cognitions, relationship satisfaction, and distress experienced, we may find the key to improving their interest and desire.

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CHAPTER 7

A QUALITATIVE EXPLORATION OF THE DISTRESS AND CONSEQUENCES EXPERIENCED BY WOMEN WITH LOW SEXUAL DESIRE AND THEIR PARTNERS IN LONG-TERM RELATIONSHIPS

The following Appendices are relevant to Chapter 7, but have not been referred in text as it has been submitted for publication.

	Page No
Appendix A – Study 1 – Ethical Clearance from Griffith University.....	260
Appendix C – Study 1 – Information Sheet and Consent Form.....	264
Appendix E – Study 1 – Recruitment materials.....	273
Appendix G – Study 1 – Phone screen questions.....	276
Appendix H – Study 1 – Semi-structured interview (men).....	279
Appendix I – Study 1 – Semi-structured interview (women).....	284
Appendix J – Study 1 – Demographic questions.....	290
Appendix K – Sexual Desire Inventory (SDI-2).....	291
Appendix L – Kansas Marital Satisfaction Scale (KMSS).....	294
Appendix M – Depression Anxiety Stress Scale – 21 (DASS-21).....	295
Appendix N – Female Sexual Distress Scale – Revised (FSDS-R).....	296

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A Qualitative Exploration of the Distress Experienced by Women with Low Sexual
Desire and their Partners in Long-Term Relationships.

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Abstract

Despite growing research interest investigating sexual desire disorders, little is known or understood about the impact on individuals, their partners, and their relationship functioning. The objective of the current study was to explore and describe the nature and types of distress, as well as the consequences of, low sexual desire for women and their higher desire partners. Semi-structured interviews and questionnaire measures were conducted with 26 participants (13 couples) between the ages 18 and 47 years (average age 31.8 years) in long-term heterosexual relationships (average duration 8 years 10 months). Thematic analysis of the interview transcripts suggested 29 conceptually distinct forms of distress and consequence described by participants. The findings from this study indicate that the distress resulting from low sexual desire is complex and multi-faceted, with important research and clinical implications. Of particular interest was the finding that the qualitative nature of the individual and relationship distress experienced by both men and women is strikingly similar.

Introduction

The diagnostic criteria for sexual desire disorders changed substantially from the fourth to the fifth editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 2000). The DSM-5 saw the addition of Female Sexual Interest/Arousal Disorder (FSIAD) as well as Hypoactive Sexual Desire Disorder (HSDD) becoming specific to males only. Despite the changes made to the female diagnostic criteria, there continues to be a distinct lack of understanding about the definitions of normal, healthy levels of desire in comparison to those that might constitute dysfunction (Brotto, 2009; Heiman, 2002).

Research in this area has focused primarily on prevalence rates of low sexual desire, with a general understanding that it is extremely common in women (up to 55%) (Richters, Grulich, Visser, Smith, & Rissel, 2003; Shifren, Monz, Russo, Segreti, & Johannes, 2008). However, the majority of studies have not separated sexual desire ‘dysfunction’ from ‘disorder’. Based on the DSM-5, it is the presence or absence of clinically significant distress that determines whether an individual can be given a diagnosis of FSAID. Due to a number of individual, lifestyle and relationship factors, it is common for individuals to experience low sexual desire without distress with approximately half of those experiencing low sexual desire also reporting distress, and it is also common to experience sexual distress without low sexual desire (Burri, Lachance, & Williams, 2014; Hayes, Dennerstein, Bennett, & Fairley, 2008; Hendrickx, Gijs, & Enzlin, 2013; Shifren et al., 2008; Worsley, Bell, Gartoulla, & Davis, 2017). However, despite its importance for diagnosis and treatment, very little research has been conducted on what might constitute clinically significant distress for sexual desire disorders. In addition, although it is generally understood that men have higher spontaneous sexual desire than females, little is

known about the differences in distress experienced by the genders, or the distress that may be present for the member of the couple with higher sexual desire.

Previous research investigating sexual distress has been limited to individuals and intrapersonal distress, rarely focusing on the relational impacts. This is surprising given that the majority of sexual activity occurs within a dyad, and that sexual dysfunctions have been found to be most distressing when they occur within the context of relationships (Lonnée-Hoffmann, Dennerstein, Lehert, & Szoeki, 2014; Shifren et al., 2008). An often overlooked finding, is that treatment is more successful when the partner is included (Hurlbert, White, Powell, & Apt, 1993), highlighting the importance of learning more about the relational aspects of sexual desire difficulties in order to effectively treat the dysfunctions and the resulting distress. Indeed, researchers and clinicians are beginning to view problems with sexual desire as relating more to the *discrepancy* in desire levels rather than the level of sexual desire in and of itself. Furthermore, desire discrepancies are increasingly being viewed as a normal feature of many long-term relationships (Herbenick, Mullinax, & Mark, 2014).

Although scant, there has been some prior work investigating the distress resulting from female sexual dysfunction and desire disorders. In a sample that included 18 women, a qualitative investigation of the experience of reduced sexual desire was conducted, that examined the perceived causes and consequences of low sexual desire (Traeen, 2008). Interviewed participants reported that low desire affected them emotionally, altered their self-esteem, and damaged their relationships. Similarly, Revicki et al (2010) conducted a focus group study of 36 premenopausal and postmenopausal women with HSDD. The sub-themes that emerged from the data (including negative emotions, issues related to sexual satisfaction, cognitions about the self, fears of infidelity, loss of closeness, increased tension and conflict, and impacts to the partner) were more related to how

individuals felt about themselves and their relationship, rather than being purely sexually related consequences. An interesting study by Stephenson and Meston (2012) of 75 women with impaired sexual functioning, found that the frequency with which a distressing consequence was reported was not necessarily related to the amount of distress it caused. For example, although participants most frequently reported experiencing less physical pleasure, they rated it as least distressing. In contrast, participants reported their partner expressing anger least frequently, yet rated it as most distressing.

The consistent themes across the studies conducted to date, are that low sexual desire affects how women think and feel about themselves, and that low sexual desire strongly impacts the relationship it is occurring within. Thus, it would seem that distressing sexual desire difficulties must be considered within a relational framework. Indeed, the importance of the relationship is highlighted in the circular female sexual response model (Basson, 2000). According to this model, although women may not initially experience spontaneous sexual desire, they may choose to start paying attention to, and processing, sexual stimuli to experience sexual arousal due to intrinsic or extrinsic motivation. Responsive sexual desire may then be experienced, and the decision to engage in sexual activity may occur due to sexual and nonsexual rewards (such as intimacy).

The current study aimed to improve upon prior studies by conducting more foundational research investigating the distress and consequences that result from sexual desire difficulties in couples. Most importantly, it is the first study to investigate the distressing consequences experienced by higher desire partners. Due to the lack of empirical research to date, the study was exploratory and qualitative in design, in order to enable a better understanding of distress and consequences from the direct perspective of women struggling with sexual desire and their partners.

Method

Participants

26 adult participants (13 heterosexual couples) in long-term relationships of 6 months or longer participated in the study. The primary inclusion criteria was that the woman self-reported having low sexual desire for at least one month during the past year that had caused some level of distress for them on an individual and relationship level. Couples were screened and excluded for current domestic violence, to reduce the likelihood that interviews may result in dangerous conflict within the couple. There were no other exclusion criteria, as this study aimed to capture the depth and breadth of experience of all couples experiencing problems with sexual desire.

A total of 46 couples were recruited through university notices, posters in mental health settings and social media. Of the 46 recruited, 16 were not included in the study because their partners were unwilling/unable to attend the interview and/or were unwilling to be recorded during the interview. The final 13 couples included in the study were selected to represent a range of age, relationship length and severity levels.

All participants were living in Australia, were Australian in nationality, and were between 18 and 47 years of age ($M = 31.8$, $SD = 7.5$). The length of the couples' relationships ranged from 2 years, 9 months to 14 years, 3 months, with an average length of 8 years and 10 months ($SD = 4$ years). Eight of the couples had between one and four children in their family. One couple was dating, four were defacto and the remaining eight were married.

Overall women reported lower average sexual desire ($M = 34.54$, $SD = 15.99$) than their partners ($M = 63.08$, $SD = 13.16$) on the SDI-2, as well as poorer mean psychological functioning using the DASS-21 (women $M = 22.15$, $SD = 4.15$; men $M = 16$, $SD = 3.95$).

However, women ($M = 17.08$, $SD = 4.17$) and their partners ($M = 17.77$, $SD = 3.44$) reported similar mean levels of relationship satisfaction on the KMSS, with both groups generating scores equal to the clinical cut-off of 17. All women participants scored well above the clinical cut-off of 11 on the FSDS-R ($M = 26.46$, $SD = 8.68$), indicating the presence of sexual distress. This information is presented for the purposes of describing the sample and was not statistically analysed.

Measures

Semi-structured Interview. A semi-structured interview was created specifically for this study to ensure standardisation of the interviewing process. The interview included questions intended to elaborate on the understanding of distress that results from low sexual desire and desire discrepancy. The interview was designed to be flexible and able to be modified by the interviewer as required, and as the data gathering process evolved. Each interview began with a standardised introduction to the research project and interview, followed by guiding questions targeting constructs such as: changes in relationship functioning and satisfaction, communication, own and partner behaviour, emotions, and cognitions. Opportunities for the participant to raise any issues of their own that related to low desire or desire discrepancy were also included.

Demographic Questionnaire. A brief pencil and paper demographic questionnaire required participants to report their age, gender, marital status, number and ages of children, and length of relationship.

Sexual Desire. The Sexual Desire Inventory-2 (SDI-2; Spector, Carey, & Steinberg, 1996) was completed by women and their partners and was used to determine individual levels of sexual desire. Thirteen of the 14 items of the SDI-2 are scored along a Likert scale, ranging from 0 (no desire) to 8 (strong desire). Thus, scores on the SDI-2 may range from 0 to 101, with higher scores indicating greater desire for sexual activity. An example

item is: ‘How strong is your desire to engage in sexual activity with a partner?’. The SDI-2 has been shown to have good internal consistency (.86) (Davies, Katz, & Jackson, 1999; Mark, 2012).

Sexual Distress. The Female Sexual Distress Scale - Revised (FSDS-R; DeRogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008) is a 13-item measure of sexually-related distress in women with sexual dysfunction. Respondents were required to rate how often they had experienced distress over the past month in relation to each item on a 5-point Likert scale ranging from 0 (never) to 4 (always). Example items include ‘Worried about sex’, ‘Guilty about sexual difficulties’, and ‘Bothered by low sexual desire’. Items on the FSDS-R are summed to produce a total score which may range from 0 – 48, where higher scores indicate greater distress. The FSDS-R has been found to have good discriminant validity, high test-retest reliability and a Cronbach’s alpha greater than .88 (DeRogatis et al., 2008). Since conducting this research, the FSDS-R has been validated in a male sample (Santos-Iglesias, 2018), but was not administered to men in the current study.

Relationship Satisfaction. Relationship satisfaction was assessed using the Kansas Marital Satisfaction Scale (KMSS; Schumm, Scanlon, Crow, Green, & Buckler, 1983). The KMSS is a 3-item questionnaire where participants rate on a 7-point Likert Scale, the degree to which they agree with each item (e.g. How satisfied are you with your marriage?) from 1 (extremely dissatisfied) to 7 (extremely satisfied). This measure allows for both individual and couple scores, with the couples score comprising the average of male and female scores. The KMSS has a cut off score of 16, where scores of 16 or lower are indicative of marital distress (Crane, Middleton, & Bean, 2000). The KMSS has been shown to have adequate internal consistency (Schumm et al., 1983), as well as strong concurrent and discriminate validity (Schumm et al., 1986).

Psychological Functioning. The total score of the Depression Anxiety and Stress Scale - Short Form (DASS-21; Lovibond & Lovibond, 1996) was used to measure overall psychological functioning. The DASS-21 is a self-report measure designed to assess depression, anxiety, and stress where respondents are required to rate how well each statement describes them (e.g. I found it difficult to relax) using a four-point Likert scale from 0 (did not apply to me at all), to 3 (applied to me very much, or most of the time). The total score is derived by summing all items and may range from 0 to 63, where higher scores indicate lower psychological functioning. The DASS-21 has been shown to be a valid and reliable measure in both clinical and non-clinical samples (Henry & Crawford, 2005), and has demonstrated Cronbach's alphas of .94, .87, and .91 for the depression, anxiety and stress subscales respectively (Antony, Bieling, Cox, Enns, & Swinson, 1998).

Procedure

Ethical clearance for this research was sought and granted from a university ethics committee. During recruitment, participants were surveyed over the phone and asked to provide basic demographic details to assist with sampling and to ensure that inclusion criteria were met. Participants were interviewed at the Griffith University Psychology Clinic by the researcher and three post-graduate clinical psychology students given a basic understanding of sexual dysfunction and distress and trained in qualitative interviewing techniques. Interviews were of approximately one-hour duration. Partners were interviewed separately and concurrently to encourage full disclosure. Interviewers alternated between interviewing men and women participants to reduce gender bias during data collection. The interviews were video-recorded for transcription and coding. Regular team meetings were conducted, during which the lead researcher and interviewers reviewed the most recent data collected, and viewed the recorded interviews throughout the process to ensure standardisation of interview protocols.

Following the interview, participants were provided with the pencil and paper self-report questionnaires that took approximately 15 minutes to complete. Upon completion, each couple received a \$50 gift card to thank them for their participation.

Data Analysis

Interviews were viewed and transcribed by the lead researcher. The NVivo for Mac software (version 11.3.2; QSR International) compliments the process of qualitative data analysis as it allows for more organised storage of transcript data and provides structure within which to determine themes. Analyses were conducted line by line directly from the transcripts of both women with low sexual desire, and their partners, following the steps outlined by Braun and Clarke (2006), with initial codes generated iteratively throughout the data collection process.

The initial round of coding resulted in a large number of poorly defined codes that were then grouped into thematically similar *nodes* within the NVivo software. The final themes described below were then developed through a process requiring multiple rounds of review and refinement, whereby themes were combined or added until the lead researcher was satisfied that each theme was distinct as judged by both internal homogeneity (all data within a theme was similar) and external heterogeneity (all themes were unique and different). To ensure reliability of the themes, a random sample of eight transcripts were independently coded by a Clinical Psychology Masters student with 77.65% agreement found. This is close to the 80% cut-off deemed adequate, although it must be noted that the large number of themes resulting from this data, makes inter-rater reliability more difficult to achieve (Miles & Huberman, 1994). The data was then split by gender to determine similarities and differences in the themes reported by the lower and higher desire partners.

Results

The analysis of the interview data identified 29 themes that reflect distinct types of distress and consequences that result when couples experience problems with sexual desire. The themes were grouped into four separate categories for ease of explanation and understanding. The categories were chosen to make theoretical sense to the majority of clinicians working in this area, and to help describe the behavioural, cognitive, emotional and social impacts of sexual desire difficulties. Table 1 presents the number of participants who spoke to a theme, and the frequency of individual statements about the theme split by gender. It is clear from this table, that all of the themes were reported by both genders with a similar frequency for most. Although there were far more similarities than differences, a small number of themes were endorsed more frequently by men, and a small number of themes were endorsed more frequently by women. It must be noted that the frequency with which a theme was reported may not have any relationship to the strength with which it was felt or the importance of the theme. Each theme is discussed in detail below, along with verbatim examples of participant comments reflecting the particular theme. At least one comment from women participants and their partners has been chosen per theme. However, the comments are not made by matched couples, but instead were chosen as statements that best capture the meaning of a particular theme for each gender. The categories and their themes are presented with those most frequently reported first.

Category 1: Behavioural Change

Behavioural change was the most frequently endorsed category for women with low sexual desire and their partners. This overarching category clusters together themes relating to the changes in behaviour since the onset of the sexual desire problems, and

includes variations in the initiation of sexual behaviour such as an overall reduction in initiation and ‘testing the waters’ prior to initiating sexual activity. Both partners also reported ways of avoiding sexual initiation, such as reducing all physical affection and avoiding situations where sexual activity is normally initiated. Ways of coping with sexual desire problems that were considered distressing by the women and their partners included women sometimes engaging in sexual activity without sexual desire, and their partners using masturbation or pornography more than they felt comfortable with. On the occasions where there was sexual contact between the partners, both reported that there was less variety in their sexual behaviour and this was more of a concern for the men

Behavioural avoidance. In this theme, both women and their partners spoke about behaving in ways to avoid the opportunity for sex, including engaging in other activities or being in a different room. Lower desire partners more frequently reported consciously avoiding situations where their partner may initiate so that they did not need to reject them, whilst higher desire partners reported avoiding situations where they could feel rejected.

W: (crying) I don't want to put myself, or him in a situation where he's gonna feel like he's pressuring me. So sometimes you just try to avoid it...

M - I think there was a lot of avoiding each other..... Right around the time when you would have sex in the evening. Putting her self out of the situation.

M - I just don't like to deal with this so I spend more time on my computer and then we're not spending time together as a couple, doing couple things.

Reduced Initiation. Most couples reported that after a period of discrepant desire, the higher desire partner did not initiate sex as often as they used to. The couple were clear that reduced initiation was the result of the women's low sexual desire rather than a lack of sexual

desire for the men themselves. They tended to talk about the feelings of rejection that led to reduced sexual initiation, and the feeling that there was no reward for attempts at initiation. Although the behaviour described relates mostly to the higher desire partners, it was reported with a similar frequency by men and women, suggesting that it is of similar concern to both genders.

W: It has [changed] over time because I guess the constant rejection gets to you. He just can't be bothered anymore. So he just doesn't try, doesn't bother,

M: It has changed. It's gone..it used to be "I wanna have sex come on come on". Then it became more, "You said you would want this so I'll do this". Then it became a case of almost like an olive branch to poke a landmine in case it went off.

Increased masturbation / pornography. This theme relates to the higher desire partner masturbating or using pornography more frequently as a way of managing their higher level of sexual desire. Some of the men and their lower desire partners found the use of masturbation and pornography more distressing than others.

W: As I said, he talks about it, he likes to watch those sorts of films, which is what I ... I, just can't compute. [blows nose]. But I guess he always needs that sort of stimulation. I don't know a nice way to say this, but he, he gratifies himself.

M: I suppose the hardest part is, the coping strategy is porn. Um...I obviously use it to get rid of the desire, and I'm always worried about getting an addiction, and I always feel bad about that. I mean there's portions of my hard drive I don't let the kids go on obviously. So I sort of feel like I've got (my partner) and I've got my sex life [indicates 2 separate things] and that makes it hard.

Reduced non-sexual physical affection. This theme relates to a general reduction in all non-sexual physical affection. Both women and men reported reducing non-sexual physical affection as a specific type of avoidance in order to lower the likelihood that either would initiate or bring up the topic of sex. Both genders spoke about this topic with a sense of loss and longing for this physical contact to return, regardless of whether it resulted in sexual activity.

W: He's less likely to grab me or give me a hug or a kiss. Definitely less than it used to be. And I think that's because I've pushed him away so many times. I mean who wants to continue getting the abuse right? You can only be told so many times to not touch somebody.

M: Not really, no, apart from the sort of routine hug and a kiss that you get when you get home from work. There's no other real passion and I think that's, I think that's probably more from [her] side because she fears that any sort of passion's going to lead towards sex, in which case she doesn't feel like it.

Intercourse without desire. This theme reflects a tendency for the lower desire partner to have sex at times without feeling any desire. Men reported being aware that their partner lacked desire and / or had sex with them without desire, and reported feeling distressed and / or unfulfilled as a result.

W: I would kind of just lay there just waiting for the job to be done. I wouldn't really be interested in doing anything or taking part, just kind of laying there doing what you need to do and get it over and done with. So I was doing that just because I felt like I had to, to you know keep him happy, and to stop the arguing. He would obviously be unhappy because I'm just laying there and you know, even though he's getting what he wants, it's not pleasurable at all.

M: Oh it was rushed, and it was a bit, not very emotional, yeah. It felt like it was to please me rather than to...Yeah basically just to get me off and get me off her back.

Less sexual variety. Due to the infrequency of sexual activity, when couples did engage in sex, it tended to have less variety and be more predictable than it might have been earlier in their relationship or at times of higher desire. The lack of variety was reported by both men and women and appeared to be due to both lack of sexual desire and pressure that each sexual encounter must be 'successful'.

W: Generally new relationships you try out a lot of stuff and then at some point, it's a constant, same routine, monotone. Um... and it is fine, but it's not good.

M: When you're in a good zone, you know, you might not just have sex in the bed, you might be on the couch or do it somewhere else... and then you get to that point where it's kind of, you go through your day, you have your evening, etc, and then you go to bed, and it's like "it's now or never", and it's almost forced.

Testing the waters. This theme relates to male reports of being tentative and checking for response when initiating, in order to either avoid rejection or to not pressure their partner.

W: I think this last sort of year or so.....I've noticed that [he] tries, will verbalise to test the waters I suppose. Like, he says something flattering to me or tries to see if I'm reciprocating.

M: For me that's like well if I'm going to lay it on the line and be all emotional and I'm invested in this sexual experience on whichever day, I don't want to go through all of that and then at the end it's like 'oh no, I'm not really keen'. So, if it's shaped behaviour it's more like I try to gauge the keenness first and then go on with it.

Initiation imbalance. This theme reflects the general feeling that one partner is always the one to initiate sexual activity, which was seen as problematic for a variety of reasons by both men and women. Both genders reported believing that initiation should be more equal in a good relationship.

W: So I think the main thing lately is that I don't initiate, like pretty much.... very occasionally. And I think for it to be a healthier relationship, it should be even.

M: The initiating thing....I'm coming to realise seems to be quite a big thing for me, so it's not just frequency of having sex or desire comparison, it's also that it's never her coming to me to initiate it which makes me quite upset. If I wanted to have sex more and she didn't but she was the one that always initiated then that would make me feel like she wants me sexually and that's maybe going back to the start where there's that passion and it's spontaneous and that sort of thing. I don't like feeling that I have to be the one that's always pushing for it because I feel like a pest then, I feel like I'm forcing you to do this and you don't want to do it. It's not a nice feeling when I feel like I'm forcing her to do it, but if I just didn't ever say anything then I'm not sure actually how often we would have it. Possibly not at all, I'm not sure. So, I feel like, not that it's my duty, but I feel like if I don't push for us to be physically connected then we won't.

Category 2: Negative Emotions

Emotional distress is the category reported with the second highest frequency by both men and women, although slightly more often by women, suggesting that women may be more concerned with the emotional consequences of low sexual desire than their male partners. Despite this overall difference, women and men both spoke of distressing anxiety, frustration, sadness, and lower sexual enjoyment at similar rates. Women reported guilt at higher rates than their partners, and were also more concerned with their

partner's anger than were men themselves. Finally, rejection was mentioned many times by participants, and even though the rejection pertained mostly to men, it was mentioned equally by men and women, suggesting that this was something they were both very concerned about.

Frustration. Within this theme, women report feeling frustrated with their low sexual desire, and males report feeling frustrated due to the lack of sexual release or hopelessness of the situation. Men had a higher frequency of statements about frustration.

W: I'm frustrated with myself. Yeah, with my body, yeah, definitely, yeah, it's, it's the tiredness that really frustrates me the most because I just, I just don't feel like it.

M: At the beginning I would feel frustrated outside the house and I'd think about it quite a bit. I wouldn't think about a solution to it. It was more just thinking about it.

M: It's probably just frustration, I don't know, just not having your natural release.

Guilt. Statements in this theme centred around women feeling guilty for rejecting their partner and / or not meeting their needs. Additionally, the higher desire partner expressed feeling guilt for pressuring their partner when they initiated sex. Guilt was reported more than twice as often by women than men.

F: I felt very guilty because I didn't know how to satisfy him and I didn't want to satisfy him because I wasn't interested in it. So then I knew that I was the cause of all the heartache in our relationship and I was the one causing all the pain and all of these feelings. I feel so guilty about that and you know I'm putting so much pressure on myself because I'm blaming myself so much for all of this and I know I'm the cause or I was the cause and I didn't know how to change that.

M: I don't want to push her and I feel that when I do ask or, you know, proposition in any way, shape or form I feel like I'm being really pushy and I feel bad. It makes me feel guilty to be honest. Like I feel I'm doing something wrong.

Reduced sexual enjoyment. This theme centred around both partners enjoying sex less than they used to due to low desire, lack of variety, or because their partner was not interested.

W: It's more of a task now, but it's something I used to get a real kick out of... now it's just sort of going through the motions, it's not really... connecting like we used to, we used to be a love thing, now it's just more something that you do. I couldn't wait for it to be finished and I was thinking what can I do to make this hurry up and be done.

M: Even the occasional times where she does say yes, sex almost feels like it's a chore for her. You know, it um, it's not like she's enjoying it, or she wants to be there you know, and that's not enjoyable for me either. After those times I think 'why do I even bother?' I want to have relations with my wife because I love my wife, you know and it's got to be a two way street.

Anger. This theme reflects the many examples participants reported of feeling anger towards themselves or their partner as a result of the desire problems in their relationship. Both men and women reported anger as an emotion that they felt internally as well as an emotion expressed by themselves or their partner. The 'Anger' theme is different to the 'Conflict' theme (see below) as it speaks specifically to the emotion felt, rather than the behavioural action resulting from anger. Although women reported anger more frequently and were concerned both their partner's anger and their own, both genders reported experiencing anger in similar ways.

W: So he would have this anger, he didn't understand why I was rejecting him all the time and he couldn't understand because he wasn't going through what I'm going through and I don't know how to explain it to him. So he was confused, he was angry, we would fight all the time because I would set him off and then he would have this bolt of anger and he would snap back at me and it was just constant fighting.

M: We went through a stage there for about three weeks, just recently, probably just about a month ago, we didn't have sex for probably about four weeks. We just hardly talked 'cause we were angry and when you get to that stage when you're angry with your partner, and sometimes it might be due to sex, ah when you're angry at your partner, the goal gets further and further away, the more you argue, the less chance it's going to happen and it's really hard to bring that back.

Rejection. This theme refers to statements relating to the rejection experienced when men initiated and women were not interested. Women reported significant empathy for their partner around rejection, and men reported many deep feelings of rejection, not only in terms of sexual rejection, but also intertwined with rejection as a person in a more general and hurtful sense.

W: Being pushed away when trying to be intimate is a horrible thing to have. I guess for anyone really. Cos you're just wanting to be close to that person and here they are not wanting you or, feeling like you want to be close. So I commend him for sticking with me anyway after what I've been through. It is still hard for both of us, but he hasn't left yet.

M: Yeah and that hurts. That's another thing, it's not about the sex, it's about the lack of trust, it's about the lack of enjoyment. She's just not interested at all and then I'm usually pretty hurt because it's often the way she makes me feel. But...yeah, it just feels like the way she does it, can be really hurtful and just not worth it

Anxiety. Within this theme, anxiety, worry and stress is present for women and men, both in anticipation of initiating and having the partner initiate, as well as more global worry about the relationship.

W: I get stressed thinking about how I'm going to say no. If I know that like that day when I get home from work and I've got too much to do and I'm exhausted, but I know that he's going to ask or initiate, I get stressed about it for three hours before it happens. I feel silly because, you know, [partner] and I have been together for ages, and I feel totally comfortable with him, but when it comes to sex and other things I sort of think, I get sort of nervous and I don't know what I'm doing.

M: If I actually sum up the courage to attempt, I'm already stressing out the whole time. Its all in my chest, my hearts pacing and I'm sort of poised, is it going to work, is it not going to work? So its kinda like, if you dive into a cold swimming pool, that kind of, taking a risk type thing.

Sadness. This theme includes reports by both men and women about the sadness they feel as the result of their desire discrepancy. The sadness seemed to result from a mix of longing for change and the closeness it would bring, with a sense of hopelessness about the situation.

W: He looks sad, so you don't get that lift of you know seeing somebody who's full of energy, that sparkle in their eye in that moment, and....when I can't give him that space that he feels he can come to for that physical contact of a lovely relationship. I don't feel the lift, but then he mustn't either? Like, so he must stay sad for so very long during the day, because he feels crap, it's running through his head. He looks sad, and I probably look sad too, and he can't come to

me and have some physical contact and not need to speak to lift his mood. I know how yucky that feels for me and that must feel very sad for him as well [crying].

M: I feel understanding but I also feel like a bit sad about the situation, like I wish that....I don't know what the right emotion word is. Almost like it's a shame in a way, it's a shame that we couldn't have been perfectly matched in that way.

Category 3: Impacts on Relationship

Women with low sexual desire and their partners spoke very similarly about the impact sexual desire problems have had for their relationships. Within this category are themes relating to communication where both men and women spoke of having difficulties explaining their experience to their partner, problems understanding how their partner felt about the situation, and the ways in which low sexual desire caused them to stop communicating about the issue. Both men and women reported experiencing more tension and emotional withdrawal from their partners, leading to a change in the perception of the relationship as being more of a friendship. Both men and women believed that sexual desire problems increased the conflict in their relationship, both about sex and more generally, and all of these themes combined to cause a loss of connection or intimacy between the partners.

Conflict. This theme included statements by men and women that they argued and were more frequently in conflict, as a result of low sexual desire. Men and women reported conflict at a similar frequency, and felt that conflict arose from the frustration and anger discussed in previous themes, as well as a reduction in more positive goal-oriented communication.

W: So we'd keep to ourselves, we'd bottle the anger up and just snap at each other and then say all these horrible things to each other that you don't really mean but because it's been building

up and building up. It never got to the point where there was any physical you know arguing, we never had that kind of relationship but lots of painful words said to each other.

M: When I was frustrated I would be quite short with her from time to time which...We'd start silly arguments about nothing really. Doing the dishes, things like that, which I am pretty sure did stem from that. But really silly things, which we've always been pretty good at figuring out or moving on from. Our relationship in general was taking a bit of a hit and we, well not every day or anything, but we'd get annoyed with each other and one of us would either storm out. Or I noticed, we both noticed this, definitely the arguments we would have were increasing.

Loss of connection and intimacy. Statements within this theme reflects that the reduction in sexual activity resulted in a loss of connection and non-sexual intimacy. Interestingly, this was reported with a slightly higher frequency by men than women, although both genders reported it frequently, indicating that it was of significant concern to both members of the couple.

W: I think that it used to be...not a huge significant part, but an important part of our relationship. It brought us closer, it wasn't just the physical act of having sex, there was other intimacies involved like laying in bed together and having conversations, which we just don't do. Our life is just very practical now. There's things that have to be done and I guess we just get on and have to get those things done, but there's none of that kind of time together, which I think sex really did for us.

M: For me I'm, maybe I'm different to other guys, I'm sure there's lots of guys that think the same [as] what I'm about to say, but sex for me isn't just about I'm the guy and I just want to have sex with you because you're a girl. It's more that that's the most profound way we can be connected as a couple is to have sex. So, I guess maybe I tell myself if you don't want to have it as much as I don't want to have it does that mean you don't wanna be as connected with me as I wanna be with you, that sort of thing

Reduced communication. Within this theme, couples report a lack of communication around problems within the sexual part of their relationship. They reported avoiding the topic of their desire discrepancy, and when it was discussed, they avoided expressing their full feelings about it. This was reported frequently and relatively equally by both women and men, with suggestions by both, that communication regarding the issue was avoided due to past attempts that had either led to conflict or frustration at not finding solutions.

W: I think we're both, without saying it, we're both aware that its kind of that elephant in the room that I know is there, we don't talk about it anymore, and I'm just sitting around waiting for the desire to spring back.

M: I've talked to her a few times but I don't think we've had a good conversation about it and we always put the baby in the middle and say, "It's because of the baby" which both of us are doing as an excuse to not look at the problem and get that relationship back on track.

Love 'quality' changes. This theme included statements by participants that although they continued to love their partner, the quality of the love was less passionate and intense, and was more that of a friendship.

W: I used to say that it's turned to kind of like friends. Not, it's not about co-existing, we know that we love each other, but some of those emotions have become more practical than expressed physically anymore. I don't think our love is in question at all. But the way that we display that love now has changed.

M: I think, when you go through those stages, um... [pause] you, you, ah... you don't see your partner as a partner any more, you see them as a co-habitant and, and you just go through the motions, you just... you're, you're just doing what you need to do to get through the day.

Withdrawal. Within this theme, participants explain that they used withdrawal behaviours (such as physically withdrawing from the space that their partner was in, or emotionally withdrawing and not sharing their inner experience with their partner) to protect themselves from hurt. Withdrawal was reported equally by men and women, although often women reported on their partner's withdrawal, indicating that this might be a coping strategy adopted more often by men when their partner has low sexual desire.

W: I shut down. Not to the point where I didn't talk to him, I engaged with him and I said I think we need help. And I put a protective barrier around myself. If I protect myself enough and I shut myself down then you'll just stay away from me [because] I can't be intimate with you right now and even if you wanted to I couldn't engage in that.

M: Upset and withdrawn. I just go into my bubble I guess. Feeling like we're not on the same page and a bit like, not questioning the relationship, but this concerns me at this point and I hope this doesn't get worse kind of thing.

Difficulty explaining / understanding. This theme reflected statements relating to participant confusion about their partner's thoughts / feelings / behaviours, and / or their inability to explain their own thoughts/feelings/behaviour to their partner so that their partner understands the depth and breadth of their thoughts and feelings about the issue.

W: So he would have this anger, he didn't understand why I was rejecting him all the time and he couldn't understand because he wasn't going through what I'm going through and I don't know how to explain it to him.

M: I guess it's more an inability for me to convey to her that she doesn't need to feel guilty or that I'm trying to push her, because I think ... I guess if I was to say to her 'We haven't had sex for three weeks', let's say I said that to her, that would be me sounding like I'm frustrated whereas it may be from my point of view, it might be me saying 'We haven't had any time together', so I can see how she'd interpret the two as totally different things.

Tension. Within this theme, participants reported a feeling of tension or strain in their relationship. This tension was reportedly different to conflict that could be seen by an outside viewer, but related more to a general feeling of tension. This theme was only reported by a small number of participants.

W: There's definitely, there's definitely a strain between us, definitely tension.

M: I think our lives would be a lot more fun. I think the times outside of the bedroom would be more relaxed too. Um, I don't know, yeah, more enjoyable, fun. I don't know, just that it does seem to be a bit of tension there.

Category 4: Problematic Thoughts

Thoughts considered to be problematic by the participants were fairly equally reported by both men and women. The sexual desire impacted upon how both men and women thought about themselves, resulting in both genders feeling less attractive both physically and as a partner, and resulting in reduced self-esteem. The often long-term nature of the concerns about sexual desire created considerable fear in both genders, that the desire would not improve, that one or both of them have been, or would be, unfaithful, and that ultimately the relationship would end. Although both genders experienced these thoughts similarly, women reported more distress that they seemed to carry the larger

burden of responsibility when it came to finding solutions for their low sexual desire, and men reported thinking that they were inadequate for their partner sexually.

Unsure how to increase desire. Within this theme, participants expressed the confusion and / or difficulty they experience when trying to increase the woman's sexual desire. Women tended to worry with greater frequency than men that they themselves were not putting in enough effort and felt hopeless about the situation.

W: I tried. I would wake up every morning and say to myself today I'm going to be better, today I'm going to try, and I would, I would wake up with that attitude but nothing would happen because you can't control what's going on inside your body. So there was a conscious decision to change but obviously it doesn't work like that.

M: So we've discussed it, and how we can do it, and you know what she wants to do to try and make it better because she wants to do something. It's one of those situations that's without a clear solution.

Fears of infidelity. This theme reflected participant fears that there may be infidelity in the past, present or future of their relationship. Men tended to fear that infidelity might be the reason that their partner had lower desire, and women feared that infidelity was an almost inevitable result of the lack of sexual activity. Considering the high frequency with which this theme was reported, it is interesting to note that none of the participants reported any actual infidelity to the interviewers.

W: Well obviously you know, we've been together for very long so I've never had any concerns about him straying but obviously if I'm not giving him anything, I have those concerns that he's going to find it somewhere else.

M: Another thing that actually started crossing my mind was, was she cheating on me?

Because it's probably a natural tendency for people to withdraw from the other one because they're finding something else. And I actually started having these thoughts - was she seeing someone else, was she cheating on me?

Lower self-esteem. Within this theme, women reported being self-critical or losing self-esteem because they thought they could not meet their partner's needs. Meanwhile, men reported lower self-esteem as a result of feeling rejection and loss of connection. This theme is separate to feeling sexually inadequate, as it speaks more to a global lowering of self-esteem as an individual and as a partner.

W: (crying) You know I feel worthless as a wife because I know as a wife I'm expected to give him what he needs as well, and not only what we needs but what he wants and what I also want in a marriage, but because I have no desire to do that I feel worthless.

M: It does rock you a lot. You go through the emotions of um... am I not good enough, normally feel less of a man.

Fear relationship will end. Within this theme, participants expressed fear that because of the desire problems, their relationship would ultimately come to an end. This fear was reported equally by women and men, and was the result of either thinking of leaving, or because they feared that their partner would leave.

W: I would just hate to think that....physical closeness outweighs the other stuff and he might feel that might be a nail in the coffin, and he might choose to exit the relationship.

M: Yeah, what if she says 'I'm not attracted to you anymore like that. You know, I look at you and you're my husband but I look at you the same way as I look at my brother'. That's the sort of answer that sends the end of the marriage basically.

Feel unattractive to partner. Within this theme, both men and women expressed feeling less attractive to their partners, both physically and as a partner. This theme is distinct from self-esteem, as feeling unattractive is one aspect of how participants viewed themselves and a cause of more global low self-esteem

W: I think about the feeling of being undesirable a lot, undesirable to my husband because I feel like he just sees me like another piece of furniture...I don't know whether the low sexual desire is the heart of all the ways that I feel about myself but I guess its sort of like a circle, you feel less attractive, so you have lower sexual desire, then your self-esteem in general is not as high.

M: I've said I don't feel attractive. That was one of the things in the big blow up we had, I actually said to her you make me feel like that every day. She was bitching about [how she doesn't] feel attractive anymore because I never comment on things. I said "Well you make me feel like that every time you push me away, you've never made me feel attractive at all".

Sexual inadequacy. Within this theme, the desire discrepancy resulted in both members of the couple feeling that they were sexually inadequate, either because they had low desire and could not meet their partner's needs, or because they saw their partner's lack of sexual desire as being caused by their own lack of sexual skill. This theme was mentioned more often by men, indicating that it might be of more concern for men than women.

W: You always compare yourself to someone else or other people, and not that we like talk about with random people that you like meet, but um just you know, what you hear I think... I feel I have low desire compared to the "normal" maybe?

M: You sort of have doubts about yourself. Um. I don't have, I'm lacking the ability to make it pleasurable for my wife...is that why she doesn't want to do it?

Fear desire will not improve. This theme included statements relating to fears that the desire discrepancy would never improve and personal and relationship implications of that. This fear was reported more often by women, although the statements were very similar for both genders.

W: So if I continue to have this low sexual desire, and say like 7 years down the track we have kids, from my understanding of after people have kids that goes down even more. So my fear is that it will be even lower in the long-term. But um... and I think, you know, it's common sitcoms and all that sort of thing that the lady is laying there and she doesn't want to, but the husband wants to...that terrifies me, and I don't want it to be like that.

M: It does hurt because at first when I was younger I could hold out a bit of hope and then you just get that dashed because of any reason.....I think though, you talk about people having years of this. I'd get very concerned.

Discussion

The aim of this study was to take a qualitative approach in developing a richer understanding of the distress and consequences that occur when women experience low sexual desire. The results give greater breadth and depth to our current understanding of this important area of couple functioning, with 29 distinct themes of distress being grouped

into cognitive, behavioural, emotional and relational categories. Overall, it was clear that when couples experience distressing desire difficulties, they report a variety of consequences at both the individual and relationship level. The relationships of the participants in this study were characterised by a pattern of negative thoughts and fears about the self and the relationship, including lowered self-esteem and concerns about the future of the relationship. These thoughts then resulted in distressing emotions such as guilt, anger, anxiety and sadness. The negative thoughts and emotions in turn appeared to be the catalyst for a range of behavioural changes such as withdrawal from the relationship through avoidance, less non-sexual physical contact, reduced sexual variety, and meeting sexual needs individually. All of the consequences reported appeared to impact upon the relationship itself, with participants reporting increased conflict, less constructive communication, and a loss of connection with their partners, whereby over time, their intimate relationships became more like friendships. The findings of this study both support and expand upon the limited research that has been conducted previously on the distress and consequences resulting from low sexual desire.

It is important to note that the themes that emerged in this study are similar to those reported in previous studies. Although placed into alternative overarching categories, the themes reported here almost entirely overlap with those of earlier studies (Revicki et al., 2010; Traeen, 2008) where participants reported similar emotional experiences, similar impacts to their sense of self, and similar subsequent consequences to their relationships. The results from Stephenson and Meston's (2012) aforementioned research were also replicated in the present study, overlapping with the researcher-derived items used in their earlier research. In line with themes emerging from the current study, Stephenson and Meston (2012) found that decreased pleasure and frequency of sexual activity, as well as greater negative self-emotions, disappointment/ sadness, and anger/frustration, were

significantly related to sexual function. It is encouraging to see three unique studies demonstrating similar findings, although the prior two only included women and therefore did not capture extra information about the experiences of the partner.

It is well established that almost half of those experiencing sexual difficulties are not significantly distressed. The findings of this study support some of the factors previously found to be related to increased distress in females including anxiety and depression (Hayes et al., 2008; Hendrickx, Gijs, & Enzlin, 2016; Shifren et al., 2008), and reduced relationship satisfaction and communication (Hendrickx et al., 2016). A potential explanation for the overlap of factors theorised to both predict and result from sexual desire may be found in Basson's (2000, 2002) updated model of sexual response, which is cyclical in nature. Unlike prior models, Basson's model introduces the idea that the sexual response is not only cyclical within the individual, but is also dependent at least partially upon the actions of the sexual or relationship partner. Many of the themes presented here have already, or have the potential to be, included within the Basson model of sexual response. Although the findings from this body of research provide a rich understanding of the types of distress and consequences experienced by couples with discrepant levels of desire between partners, the picture of antecedents and consequences of sexual desire and distress for both males and females remains unclear, highlighting the importance of longitudinal research to be conducted.

Building upon the themes that match earlier research, the in-depth interview method of the current study has enabled a deeper understanding of the consequences of low sexual desire than was evident in previous studies, with further unique themes such as behavioural avoidance, increased masturbation, reduced non-sexual physical affection, feelings of guilt, reduced communication and withdrawal from the relationship, emerging.

Notably, whilst earlier research included only women (Revicki et al., 2010; Stephenson & Meston, 2012; Traeen, 2008), the present study also included their partners. It is particularly noteworthy that all themes were reported by both women with low sexual desire and their partners, suggesting that there is a common experience when couples are distressed by sexual desire difficulties. The women participants and their partners reported parallel descriptions when discussing the impact sexual desire problems has had on their relationship, with both members of the couple experiencing changes to the way that their relationship functions. Both men and women were particularly concerned with the increased conflict, reduced positive communication and loss of connection or intimacy they were experiencing. Measures of distress rarely tap into these relationship constructs, and this finding may be particularly useful for clinicians who are helping couples find common ground when sexual desire has created relationship distress.

There were also more similarities than differences when participants described the emotions they experienced due to low sexual desire. Men and women alike reported anxiety, anger and sadness in relation to these difficulties, and these are the emotions often included within measures of individual sexual distress. However, there was some variation between genders, with women reporting substantial guilt arising from their low sexual desire and the impact it has on their partners, and men more likely to express frustration about the issue. This difference may be more closely linked to whether an individual is seen as the partner with the 'problem' and less with gender, however more research is required to tease this apart more accurately. Again the similarities within this category suggest a common emotional experience for men and women.

Finally, the themes relating to thoughts and behaviours were again more similar than different across gender. Both women with low sexual desire, and their partners, expressed problems with self-esteem and feeling unattractive to their partner, as well as many fears

such as infidelity and the end of the relationship. Men were more likely to think they were sexually inadequate as a result of the sexual desire problems and women expressed more confusion about how to increase their sexual desire. Both genders were concerned that neither were initiating sexual activity anymore and that there was less non-sexual physical affection than before. However there was a difference in some of the behavioural changes that appear to be coping strategies; women were more likely to avoid their partner in situations when sexual activity might be possible and have intercourse without feeling desire, while men reported doing things to tentatively see if their partner might be responsive and used more masturbation and pornography to manage their higher sexual desire. It seems that there were more gender differences in the behaviours that result from low sexual desire than were evident in any of the other categories.

Taken together, it appears that women with low sexual desire and the men who are their partners, have very similar experiences as a result of the sexual desire problems in their relationships. The relationship impacts are viewed similarly by both genders, and there is a common set of negative emotions experienced in these situations. However, there is more difference in the cognitions and behaviours that result.

The deeper understanding of the distressing consequences of sexual desire discrepancy presented in this paper can now inform future research and treatment targets. For instance, Basson's (2002) circular model of sexual response posits that it is the emotional symptoms, negative cognitions, behavioural responses and reduced relationship satisfaction that continues the cycle of reducing sexual desire for women. It is theoretically possible, therefore, that a treatment focused on reducing the distress and consequences, may alter this cycle, resulting in more positive sexual spinoffs and in turn, an increase in sexual desire (Frost & Donovan, 2015).

This study had a number of strengths worth outlining, with potentially the largest contribution being that it is the first study to ask men about their experiences of being in a relationship with women with low sexual desire. In a similar vein, it is also the first study to investigate the consequences for the higher desire partner. Although there were more similarities than differences, it is unclear whether these were between high and low desire partners or along gender lines. This study is also the first qualitative study to conduct in depth interviews with women with low sexual desire individually, and has therefore increased the breadth and depth of understanding about the distress and consequences from low sexual desire in women.

Despite the present study's strengths, it was not without its limitations. The small sample size may mean that the sample was not representative. Given the low power and qualitative nature of the research, the results cannot be generalised with confidence and need to be examined quantitatively as a next step. Participants were asked to self-report low sexual desire and this methodology does not allow us to confirm whether they would meet diagnostic criteria. Another limitation was the lack of distinction between desire and arousal when interviewing participants, a decision made due to prior research establishing that most individuals have little understanding of the differences (Goldhammer & McCabe, 2011). The study only included heterosexual cisgender Australian couples, and therefore it is important to repeat the study with same-sex partnered couples and couples from different cultures. Finally, it is important to highlight here that the current study only interviewed distressed couples and did not ask for any positive consequences of sexual desire discrepancies. Thus, more positive reports and protective thoughts, emotions and behaviours relating to this element may have been missed.

The results from the current study have both supported and expanded upon prior research into distressing desire difficulties. However, there is still much we can learn about

this issue. Most research into sexual desire difficulties has focused on factors that correlate with low desire in females, with the theoretical assumption that these are causal. Many of these factors were also found within this study, indicating that this pattern may be cyclical as previously theorised, and that research of a longitudinal nature is required. Future research should continue to include men as they have historically received scant empirical interest (Brotto, 2010). Not only should men's experiences be brought into sharper focus, but also the experiences of the higher-desire partner, as it is the interaction between individuals within relationships such as behavioural avoidance, increased conflict, and reduced connection, that appear to cause the most distress. Finally, the results from studies such as this need to be expanded upon in order to determine why distress is present for some but not all individuals and couples experiencing these difficulties.

Whether the themes emerging from this study are representative of the wider population needs further examination. However, where the results overlap with prior research, it can be said with some confidence that low sexual desire and desire discrepancy can indeed be a multifaceted and highly distressing experience with a multitude of combinations of consequences experienced by any individual and their relationship. These consequences and the resulting distress is experienced similarly by both women with low sexual desire, and the men they are in relationships with. Our knowledge of the distress and consequences resulting from sexual desire difficulties is much richer due to the qualitative nature of this research, and we can now describe the experiences of couples who are concerned by this very common issue. Ultimately, the themes resulting from this study provide researchers with a myriad of possibilities for further investigation and affords us a deeper understanding of sexual desire difficulties.

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Table 1. *Categorisation and frequencies of distressing consequences of low sexual desire within a relationship context.*

Category	Themes	Number of participants (percentage)	Frequency of statements		
			Total	Women	Men
Behavioural Change		26 (100)	302	145	157
	Behavioural avoidance	21 (81)	85	49	36
	Reduced initiation	20 (77)	70	32	38
	Increased masturbation / pornography	15 (58)	37	8	29
	Reduced non-sexual physical affection	12 (46)	30	15	15
	Intercourse without desire	13 (50)	29	25	4
	Less sexual variety	8 (31)	26	9	17
	Testing the waters	11 (42)	22	6	16
	Initiation imbalance	12 (46)	19	9	10
Negative Emotions		25 (96)	279	151	128
	Frustration	17 (65)	72	29	43
	Guilt	22 (85)	69	47	22
	Reduced sexual enjoyment	18 (69)	42	21	21
	Anger	18 (69)	42	28	14
	Rejection	9 (35)	40	20	20
	Anxiety	8 (31)	18	8	10
	Sadness	7 (27)	17	8	9
Impacts on Relationship		25 (96)	214	106	108
	Conflict	17 (65)	66	34	32
	Loss of connection and intimacy	17 (65)	64	29	35
	Reduced communication	17 (65)	40	18	22
	Love 'quality' changes	8 (31)	20	11	9
	Withdrawal	8 (31)	16	8	8
	Difficulty explaining / understanding	4 (15)	13	10	3
	Tension	5 (19)	6	2	4
Problematic Thoughts		26 (100)	165	92	73
	Unsure how to increase desire	9 (35)	35	25	10
	Fears of infidelity	12 (46)	32	19	13
	Lower self-esteem	14 (54)	31	15	16
	Fear relationship will end	12 (46)	29	15	14
	Feel unattractive to partner	10 (38)	21	12	9
	Sexual inadequacy	9 (35)	17	6	11
	Fear desire will not improve	7 (27)	12	8	4

CHAPTER 8

THE DEVELOPMENT AND VALIDATION OF THE SEXUAL AND RELATIONSHIP DISTRESS SCALE (SARDS)

The following Appendices are relevant to Chapters 8 and 9, but have not been referred in text as it has been submitted for publication.

	Page No
Appendix B – Study 2 – Ethical Clearance from Griffith University.....	262
Appendix D – Study 2 – Information Sheet and Consent Form.....	269
Appendix F – Study 2 - Recruitment Materials.....	275
Appendix K – Sexual Desire Inventory (SDI-2).....	291
Appendix M – Depression Anxiety Stress Scale – 21 (DASS-21).....	295
Appendix N – Female Sexual Distress Scale – Revised (FSDS-R).....	296
Appendix O – Study 2 – Demographic questions.....	297
Appendix P – Original items for measure of sexual distress.....	298
Appendix Q – Couples Satisfaction Index (CSI-16).....	300
Appendix R – Sexual function questions.....	302
Appendix T – Sexual and Relationship Distress Scale (SaRDS).....	318

This chapter includes a co-authored paper, which is currently “Under Review”. The bibliographic details of the paper are:

Frost, R. N., & Donovan, C. L. (2018). The Development and Validation of the Sexual and Relationship Distress Scale (SaRDS). *Journal of Sexual Medicine*, in press.

My contribution to the paper involved: initial concept and review design; literature search and review of relevant research; data collection and data analysis; and manuscript preparation.

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Abstract

Background: Sexual distress is an important factor in the aetiology, maintenance and treatment of sexual difficulties, and as such, there is a need for validated measures. A limitation in the research and treatment of distressing sexual difficulties has been the lack of validated measures, and in particular, existing measures are unable to measure the impacts at the relationship level and currently focus on intrapersonal distress.

Aim: This study sought to develop and psychometrically evaluate, a new measure of distress associated with sexual difficulties.

Methods: An initial pool of 73 items was created from the results of an earlier qualitative study and administered using an online survey to 1381 participants (462 men, 904 women and 14 who identified as 'other'), along with measures for the purposes of psychometric evaluation including the FSDS-R, CSI-16, DASS-21, and questions relating to sexual function. Exploratory (EFA) and Confirmatory Factor analyses (CFA) in separate split-half samples were conducted, followed by analysis of validity and reliability of the resulting measure.

Outcomes: The Sexual and Relationship Distress Scale (SaRDS) was developed to meet the need for a patient-reported outcome (PRO) measure of individual and relationship distress within the context of sexual dysfunction and resulted in a psychometrically sound 30-item, 14 factor measure of sexual and relationship distress.

Results: The final 30 items explained 77.5% of the total variance and the CFA showed that this model has an adequate fit (CFI = .97, NFI = .95, RMSEA = .05). The final measure demonstrated good psychometric properties, with strong internal reliability

(Cronbach's $\alpha = .95$ for the total score with individual subscales ranging from .70 to .96), and convergent and discriminant validity when compared to current measures (FSDS-R, $r = .82, p < .001$, CSI, $r = -.69, p < .001$., DASS-21, $r = .37, p < .001$).

Clinical Implications: The SaRDS may prove useful for researchers and clinicians interested in understanding and improving the distress experienced within the context of sexual difficulties. The new measure is brief (30 items), easy to administer and score, easily understood (Flesch-Kincaid reading level = Grade 3.9) and demonstrates high internal consistency, convergent and discriminant validity.

Conclusion: Unlike most measures in this field, the SaRDS is multi-dimensional and assesses 14 distinct yet related types of sexual and relationship distress experienced in the context of sexual dysfunctions. It can be administered across genders and both members of a couple. It therefore has multiple uses within both research and clinical settings.

Key words: Sexual disorder, sexual dysfunction, relationship distress, sexual distress, couples

Introduction

Distress is an important factor in the aetiology, maintenance and treatment of sexual difficulties. As such, the need for validated measures of sexual distress for use as patient-reported outcome (PRO) measures in future clinical trials has been repeatedly highlighted in recent years by the International Consensus Development Panel on Female Sexual Dysfunctions (Basson et al., 2000), the International Society for the Study of Women's Sexual Health (ISSWSH) (Kim, Goldstein, Simon, Freedman, & Parish, 2017), and FDA guidance on standards for clinical trials (Clayton et al., 2010). In order to diagnose and treat sexual disorders, clinicians turn to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013), central to which is the presence of 'clinically significant distress'.

The difficulty defining distress is evident in the prevalence literature where rates vary widely due to substantive differences in how sexual concerns are measured. Also, many researchers have not historically made a distinction between sexual problem/impaired function (where distress is not present) and sexual disorder/dysfunction (where both problem/impaired function and distress are present as required in the DSM-5) (Parish & Hahn, 2016). Regardless, it is very common to experience at least one (but often more) sexual dysfunction at any given time, with a prevalence rate of between 40% and 50% in women (McCabe et al., 2016) and 35% in men (Hendrickx, Gijs, & Enzlin, 2016). The most commonly reported problems are low sexual desire and arousal for women, and premature ejaculation and erectile dysfunction for men (De Visser, Richters, Yeung, Rissel, & Simpson, 2017; Hendrickx et al., 2016; McCabe et al., 2016; Shifren, Monz, Russo, Segreti, & Johannes, 2008).

Generally, women with sexual dysfunction are more likely than women with normal sexual functioning to report negative emotions and psychological states such as unhappiness, concern, disappointment and inadequacy (Dennerstein, Guthrie, Hayes, DeRogatis, & Leher, 2008), although most research of this nature has been correlational. Stephenson et al. (2012a) have undertaken the most comprehensive research to date investigating the consequences and distress caused as a result of female sexual dysfunction. In that study, women were found to report decreased pleasure, disruption of sex, decreased frequency of sexual activity, decreased partner pleasure, negative partner self-emotions, partner disappointment / sadness, and partner anger / frustration. A qualitative investigation of the experience of reduced sexual desire, including the perceived causes and consequences, has also been conducted with a sample of 18 women and four men, making it the first study to investigate the distress men experience due to sexual desire problems (Traeen, 2008). Interviewed participants reported that individuals felt that low desire affected them emotionally, altered their self-esteem, and damaged their relationships. Other studies have found that individuals are significantly more likely to seek help if they feel distressed (Hendrickx et al., 2016) yet reduction in symptoms alone is not sufficient to reduce individual distress about sexual functioning (Stephenson, Rellini, & Meston, 2013). It is therefore important for us to understand more about the distress experienced when sexual dysfunctions are present, and to consider including distress as a treatment target rather than simply as a by-product of treatments targeting symptom reduction (Frost & Donovan, 2015).

An important issue that is often omitted in the sexual dysfunction literature is the well-established fact that not all people find their dysfunction distressing. Although it makes intuitive sense that sexual distress would be associated with low sexual function

(including low desire), studies have found this association to be weak. The Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking (PRESIDE) study (Shifren et al., 2008) investigated the prevalence rates of common sexual problems while also measuring related distress using the Female Sexual Distress Scale (FSDS; DeRogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). It found that while 44.2% of its female respondents reported the presence of a sexual problem, only around half (22.8%) reported personal distress. Similar results have been found across multiple studies (albeit predominantly conducted with female participants), finding that between one third and one half of individuals with sexual dysfunction also report distress (Burri, Rahman, & Spector, 2011; Hayes, Dennerstein, Bennett, & Fairley, 2008; Hendrickx, Gijs, & Enzlin, 2013; Hendrickx et al., 2016; O'Sullivan, Brotto, Byers, Majerovich, & Wuest, 2014; Peixoto & Nobre, 2015a, 2015b; Rosen et al., 2009; Worsley, Bell, Gartoulla, & Davis, 2017).

Researchers have investigated the factors that predict whether an individual will experience their sexual difficulties as more or less distressing. Amongst these (many only researched in specific disorders or populations) are age (Connor et al., 2011; Dennerstein, Koochaki, Barton, & Graziottin, 2006; Graziottin, 2007; Laumann, Paik, & Rosen, 1999; Stephenson & Meston, 2012b), health problems (Dennerstein et al., 2006; Shifren et al., 2008), chronic pain (Burri, Lachance, & Williams, 2014), anxiety (Shifren et al., 2008), and depression (Dennerstein et al., 2008; Hayes, Dennerstein, Bennett, Sidat, et al., 2008; Shifren et al., 2008; Worsley et al., 2017). More recently, it has been noted that the presence of a relationship is an important predictor of whether an individual is likely to be distressed (Burri et al., 2014)

The lack of commonly used, validated measures of sexual distress makes it difficult to compare the limited studies using distress as an outcome variable. Historically, valid and reliable measures of sexual distress, e.g., the Sexual Satisfaction Scale for Women (SSS-W; Meston & Trapnell, 2005) and the Female Sexual Distress Scale - Revised (FSDS-R; DeRogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008) have focused on personal distress, mostly ignoring the impact of sexual difficulties on relationships, and have been developed for females only. Measures currently exist that measure distress about sexual dysfunction such as the FSDS-R, as well as multiple high quality scales of relationship functioning and satisfaction including the Dyadic Adjustment Scale (DAS; Spanier, 1976) and the Couples Satisfaction Index (CSI; Funk & Rogge, 2007).

The only validated measure currently available to measure both sexual and relationship distress within a single scale is the Sexual Desire and Relationship Distress Scale (SDRDS; Revicki et al., 2012). This measure was developed using strong methodology and is psychometrically sound. However, it was designed specifically for use only for females with low sexual desire. Alternative measures have not been created for other sexual dysfunctions or the male population, and therefore there is strong need for a measure with wider utility.

Relationship factors are well known to be associated with distress about sexual dysfunction, yet literature about the aetiology and treatment of most sexual disorders has historically failed to consider this. The PRESIDE study found that women with a sexual dysfunction who were married or in a de facto relationship were 1.91 times more likely to experience distress (Shifren et al., 2008). Indeed, relationship satisfaction has been shown to be one of the strongest predictors of sexual distress (Bancroft, Loftus, & Long, 2003; Bois et al., 2016; Burri et al., 2011; Corona et al., 2005; Dennerstein et al., 2008; Lonnè-

Hoffmann, Dennerstein, Lehert, & Szoeki, 2014; Öberg & Sjögren Fugl-Meyer, 2005; Rosen et al., 2009). This was supported in research about desire-specific distress where the item 'I was letting my partner down' was the most frequently reported consequence, endorsed by 90% of women in the study (Dennerstein et al., 2006). Furthermore, it would seem that the frequency of a particular problem is not necessarily related to the distress it leads to. In their sample of 75 women, (Stephenson & Meston, 2012a) found that although the least frequent response was the partner expressing anger towards the participant during or after sex, it was the most distressing issue.

Although under researched, there is some evidence to suggest that taking a couples approach to the treatment of sexual disorders is beneficial (Fish, Busby, & Killian, 1994; Fisher et al., 2015; Gehring, 2003; Hirst & Watson, 1997; Hurlbert, White, Powell, & Apt, 1993; Johnson, Simakhodskaya, & Moran, 2018; Macphee, Johnson, & van Der Veer, 1995). It has been suggested that when sexual problems arise, the couple can become stuck in a vicious cycle (Traeen, 2008) whereby unresolved conflict aids the development of dysfunction, and the dysfunction creates increased conflict and distress in the overall relationship (Metz & Epstein, 2002). Hurlbert et al. (1993) found that when they allocated their sample of 57 women with hypoactive sexual desire into women's only (WO) and couples only (CO) groups, the CO group reported more improvement than the WO group. Similarly, Hirst & Watson (1997) conducted a retrospective study of case-notes of 830 consecutive referrals to a psychosexual clinic at Guy's Hospital in London and found that when a patient was in a relationship, the most significant predictor of treatment outcome was whether or not the patient's partner attended. In fact, it has been found that relationship satisfaction is a significant moderator of sexual distress in women who have completed CBT for sexual dysfunction, indicating that even when the dysfunction is

successfully treated, reduction of the dysfunction alone is not enough to reduce distress (Stephenson et al., 2013). With this in mind, it has been posited that for sexual dysfunctions that have historically been difficult to treat, reducing distress alone may be a sufficient treatment target (Frost & Donovan, 2015). It is therefore important to develop a measure of distress that can be used by both members of the couple for use within research and clinical settings.

The purpose of the current study was to create a new measure that could accurately capture both the intrapersonal and interpersonal distress experienced by individuals who are in relationships where one (or more) partner has sexual difficulties. It has been designed to include multiple sub-tests in order to allow the measure administrator to quantify different types of distress, while also being able to use a total score as this will provide more information on outcome efficacy (Fisher et al., 2016). It has also been designed to be simultaneously comprehensive yet brief enough for optimal utility in both research and clinical settings.

Materials and Methods

Data Analytic Plan

In order to conduct exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), the sample was randomly split into two groups (split-half), a practice deemed useful for cross-validation purposes (Floyd & Widaman, 1995). The EFA was conducted using the first split-half, CFA with the second split-half, and then the sample was recombined to examine the psychometric properties of the final measure.

For the EFA, parallel analysis was performed to determine the optimal number of factors. With large sample sizes it is common for statistical techniques such as parallel

analysis to overestimate the number of factors because they pick up very small levels of residual covariation (Floyd & Widaman, 1995). Therefore, more stringent *a priori* criteria for the retention of factors and items were set as follows: a) item factor loadings must be above .4 as recommended by Tabachnick and Fidell (2007), b) item factor cross-loadings must be below .3, c) factors were to contain at least 2 items, and d) factors and their items needed to be theoretically justifiable. Principal Axis Factor Analysis (PAF) was the method used for Exploratory Factor Analysis (EFA). A preliminary PAF with oblique (Direct Oblimin) rotation was conducted as it was expected that factors would be correlated with each other. Following this, in order to examine whether the final items of the SaRDS conformed to the factor structure that emerged in the first split-half sample, a Confirmatory Factor Analysis (CFA) was conducted on the final items using IBM's SPSS Amos program Version 20.

Finally, the psychometric properties of the scale were assessed using Pearson's R for internal consistency, and correlation analyses to determine convergent and discriminant validity.

Participants

An online survey was completed by 1437 participants. In order to take part, participants were required to endorse a consent form and be over 18 years of age, in a relationship of at least 6 months duration. The authors chose this time period, because although there is variation amongst papers, the 6-month time period has been standard in previous couples studies in this field (unless sampling a specific population such as long-term relationships) (Bancroft et al., 2003; Davies, Katz, & Jackson, 1999; McCabe & Goldhammer, 2011) and also recently used for the development of a similar measure

(Revicki et al., 2012). It allows for a relationship to become committed enough to be termed a 'couple' or 'relationship' rather than dating.

Data cleaning involved removing participants who reported being under 18 years of age ($N = 4$), single ($N = 12$), in a relationship of less than 6 months ($N = 2$), or who did not complete any of the questions ($N = 37$). This resulted in 1381 remaining participants (462 men, 904 women, and 14 who identified as 'other) who were then randomly split to produce samples of 714 for the EFA, 667 for the CFA, and after further data cleaning, 1192 participants for the psychometric analyses. Table 1 outlines the demographic information for participants involved in the EFA, the CFA, and the entire sample. Missing data analysis using Little's MCAR test showed that less than 1% of cases were missing at random, $\chi^2 = 4950.55$ ($df = 4860$; $p < .179$). Missing cases were replaced using multiple imputation. The alternative to replacing missing values is to delete cases where items are missing which would result in a large number of completed questionnaires being excluded from the analysis (Schafer & Graham, 2002).

Table 1
Participant Characteristics

	Exploratory Factor Analysis	Confirmatory Factor Analysis	Psychometric Analyses
Number of participants	714	667	1192
Age (years)	$\bar{x}=31.97$ ($SD=10.47$)	$\bar{x}=33.94$ ($SD=11.56$)	$\bar{x}=33.3$ ($SD=11.03$)
Relationship length (years)	$\bar{x}=7.5$ ($SD=7.3$)	$\bar{x}=8.6$ ($SD=8.58$)	$\bar{x}=8.58$ ($SD=8.4$)
Sex			
- Male	242 (33.9%)	220 (33%)	402 (33.7%)
- Female	465 (65.1%)	439 (65.8%)	784 (65.8%)
- Other	6 (.09%)	8 (1.1%)	6 (0.5%)
Relationship			
- Married	308 (43.1%)	294 (44.1%)	528 (44.3%)
- Dating	231 (32.4%)	197 (29.5%)	354 (29.7%)
- Defacto	158 (22.1%)	162 (24.3%)	286 (24%)
Number of children			
- None	389 (54.5%)	334 (50.1%)	616 (51.7%)
- 1-3	286 (40%)	296 (44.38%)	503 (43.04%)
- ≥ 4	35 (4.9%)	28 (4.2%)	57 (4.78%)
Sexual orientation			
- Heterosexual	579 (81.1%)	565 (84.7%)	990 (83.1%)
- Homosexual	30 (4.2%)	18 (2.7%)	46 (3.9%)
- Bisexual	95 (13.3%)	69 (10.3%)	138 (11.6%)
- Other	7 (1%)	12 (1.8%)	17 (1.4%)
Education			
- University	413 (57.8%)	438 (65.67)	754 (63.26)
- Trade	95 (13.3%)	70 (10.5%)	133 (11.2%)
- \leq High School	203 (28.4%)	156 (23.39%)	304 (25.5%)

The 73 survey items were tested for normality, and although it was found that univariate and multivariate outliers were present, the cases were retained on theoretical grounds, as it appeared to be capturing the clinical portion of the sample. This decision is in keeping with Waller's (1989) assertion that it is often the variables that capture rare and pathological events that are the most diagnostically relevant. As a result, the data contained 12 skewed variables which were also retained, untransformed, because normality is not expected or required in Likert scales when using Principal Axis Factor analysis (PAF) (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Floyd & Widaman, 1995).

Although there is wide variability in the number of participants considered adequate for factor analytic procedures, the sample size used in this study is well above the 300 participants recommended by Tabachnick and Fidell (2007), and within an acceptable subjects-to-variable ratio of between 5 and 10 as often proposed (Gorsuch, 1983; Streiner, 1994).

Procedure

An institutional ethics review board approved the design and materials for this research. Participants were recruited from multiple sources including social media (Facebook, Twitter and Instagram), online websites (e.g., University of Hanover, Justin Lehmler, Social Psychology Network, Reddit), and the university undergraduate subject pool. Participants were provided with a link to the online information and consent form. Only after giving consent were participants directed to the online questionnaire survey that comprised the measures described below. Respondents took a median 17 minutes to complete all of the measures and were not provided with any incentives to participate.

Measures

Demographics. Demographic questions were included at the outset of the questionnaire including age, gender, sexual orientation, household income and educational status. Relationship-specific questions such as relationship status, relationship length and number of children were also asked.

Sexual and Relationship Distress. The initial pool of items for the development of the Sexual and Relationship Distress Scale (SaRDS) was derived from the transcripts of an earlier qualitative study (Frost & Donovan, under review), where 13 couples were interviewed separately and comprehensively about the distress and consequences they experienced as a result of a self-reported discrepancy in their levels of

sexual desire. Previous similar measures of sexual distress have mostly included researcher-derived items, so it was considered important to take a bottom-up approach when creating items to match the experiences and statements of the target population as closely as possible. Transcribed interviews were thematically analysed and resulted in 29 unique themes (Frost & Donovan, under review). Each unique theme that emerged from this study was represented by two or three items, resulting in 73 items in total. Items were reviewed by an expert in the field for real-world accuracy, and designed to be easily read and understood.

Participants were asked to rate how true each item was for them over the past month using a 7-point Likert scale from 0 (not at all true) to 6 (completely true). It was specified that whenever the word ‘sex’ was used, it referred to any sexual activity with their partner and not just intercourse.

Sexual Distress. The Female Sexual Distress Scale – Revised (FSDS-R; DeRogatis et al., 2008) is a 13-item measure of sexually-related distress in women with sexual dysfunction, and was used to assess convergent validity of the SaRDS. Respondents were required to rate how often they had experienced distress over the past month in relation to each item on a 5-point Likert scale ranging from 0 (never) to 4 (always). Example items include ‘Worried about sex’, ‘Guilty about sexual difficulties’, and ‘Bothered by low sexual desire’. Items on the FSDS-R are summed to produce a total score which may range from 0 – 48, where higher scores indicate greater distress. The FSDS-R has been found to have good discriminant validity, high test-retest reliability and a Cronbach’s alpha greater than .88 (DeRogatis et al., 2008). In accordance with previous studies, the original wording of the instructions (switching ‘women’ to ‘individuals’) was modified so that it could be administered to both males and females (Brotto, Yule, & Gorzalka, 2015; Park,

Villaneuva, Viers, Siref, & Feloney, 2011). Since conducting this study the FSDS has been validated in a male sample (Santos-Iglesias, 2018). The Cronbach's alpha for the FSDS-R in the current study was .94.

Relationship Satisfaction. The Couples Satisfaction Index 16-item version (CSI-16; Funk & Rogge, 2007) is a brief measure of relationship satisfaction that was also used for convergent validity. Participants rated their agreement with a wide variety of items on a 6 or 7-point Likert scale (depending on the item). Example items include 'Our relationship is strong', 'How well does your partner meet your needs?' and 'In general, how satisfied are you with your relationship?'. Scores are summed to create a total score that can range from 0 to 81, with higher scores indicating greater relationship satisfaction. The CSI-16 demonstrates excellent internal consistency (Cronbach's alpha = .98) and has been shown to be a valid measure of the construct. The Cronbach's alpha for the CSI-16 in the current study was .97.

Psychological Functioning. The Depression Anxiety and Stress Scale - Short Form (DASS-21; Lovibond & Lovibond, 1996) is a self-report measure designed to assess depression, anxiety, and stress, and was used to determine discriminant validity of the SaRDS. Participants were required to rate how well each statement described them (e.g. *I found it difficult to relax*) using a four-point Likert scale from 0 (did not apply to me at all), to 3 (applied to me very much, or most of the time). For the purposes of this study, the total score derived by summing all items, was used as a measure of overall psychopathology. The DASS-21 has been shown to be a valid and reliable measure in both clinical and non-clinical samples (Henry & Crawford, 2005), and has demonstrated Cronbach's alphas of .94, .87, and .91 for the depression, anxiety and stress subscales

respectively (Antony, Bieling, Cox, Enns, & Swinson, 1998). The Chronbach's alpha for the DASS-21 total score in the current study was .94.

Individual Sexual Functioning. Six individual yes/no items were included to assess the presence or absence of the most common sexual dysfunctions; low sexual desire, difficulties with orgasm, pain, and gender specific items pertaining to erectile difficulties and vaginal dryness. These items were modelled (with permission) from those used in a large Australian representative study, the Australian Study of Health and Relationships (Richters, Grulich, Visser, Smith, & Rissel, 2003) that has been conducted with approximately 20 000 participants, repeated again 10 years later with another cohort of 20 000 participants and published in at least 17 peer-reviewed papers. The items were as follows: *During the last year has there been a period of one month or more when you lacked interest in having sex?*, *Has there been a period of one month or more when you were unable to come to orgasm (a climax)?*, *Has there been a period of one month or more when you came to orgasm (a climax) too quickly?*, *Has there been a period of one month or more when you experienced physical pain during intercourse?*, *Has there been a period of one month or more when you had trouble keeping an erection when you wanted to?*, and, *Has there been a period of one month or more when you had trouble with vaginal dryness?*. Individual responses were used to compare the total scores of the SaRDS of individuals with different sexual difficulties.

Results

Exploratory Factor Analysis

By comparing the eigenvalues of random data against the real data, the parallel analysis found 17 factors to have eigenvalues larger than the 95th percentile of random

data. Despite the parallel analysis resulting in 17 factors, only 12 factors had eigenvalues over 1. It was therefore decided that any number of factors between these two limits should be considered, with a 17-factor structure forced onto the preliminary EFA.

All values in the anti-image correlation table were well above .5, indicating that the variables were suitable to be used within the measure. An examination of the Kaiser-Meyer Olkin (Kaiser, 1974) measure of sampling adequacy suggested that the sample was factorable (KMO=.962). Bartlett's test of sphericity was significant, $\chi^2(2628) = 46733.38$, $p < .000$.

Initially, items with low commonalities ($<.5$) were deleted and the EFA repeated. All factor solutions ranging from 15 to 17 factors were trialled, with the 16-factor solution retained as the factors made the most theoretical sense. Throughout multiple iterations, items with poor factor loadings ($<.4$) or high split-loadings ($>.3$) were excluded from further analysis.

Two stable factors, and the items that they contained, were also deleted as they were inversely and minimally correlated with the majority of other factors. One of these factors (named 'Testing the waters') included items describing caution when initiating sexual activity with their partner such as '*I try to work out if my partner is interested before I will initiate sex*'. This factor, and its associated items, represented a set of functional or protective behaviours and were considered to be outside the scope of the intended measure. The other factor (named 'Negotiating') included items such as '*I do or say things that let my partner know not to initiate sex*' and '*Sometimes I have sex even though I do not have any interest*' and was also excluded as it was thought to be a set of proactive functional behaviours when there is a sexual desire discrepancy. These iterations resulted in a 14 factor, 44-item version. However, for regular clinical or research use, a

series of rules were determined to reduce the number of items while retaining the factor structure. Items were removed through an iterative process if they were very highly correlated with another item within the same factor ($>.8$) and / or had a 'good' factor loading of less than .55 as described by Comrey and Lee (1992). It has been posited that factors with two items or less are more prone to estimation problems and may be weak or unstable, but that this issue is greater when the sample size is small (Costello & Osborne, 2005). However, scale brevity is of increasing concern (Clark & Watson, 1995) and it is appropriate to retain these factors if the items are highly correlated with each other ($r > .70$) and fairly uncorrelated with other items (Worthington & Whittaker, 2006; Yong & Pearce, 2013). If a factor captures a narrowly defined construct even a single item may be sufficient (Wanous, Reichers, & Hudy, 1997).

This resulted in the final 30-item, 14 factor SaRDS (see Table 2). These factors determined the subscales that can be scored by combining the item scores and then combining subscale scores to determine the scale's total score: Anxiety, Conflict, Initiation, Guilt, Infidelity, Security, Predictability, Communication, Body Image, Physical Affection, Hopelessness, Self-Esteem, Normalness, and Relationship Quality. The final 30 items explained 77.5% of the total variance, a figure well above the 50% recommended by Streiner (1994), and adequate if compared to the benchmark of 80% set by Floyd and Widaman (1995).

Table 2

Factor loadings for items included within the Sexual and Relationship Distress Scale

Variable	Factor loading														Communality
	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	
	Anxiety														
I worry about sex even when I am not with my partner	.74	-.01	.04	-.05	.02	.06	.03	-.03	.04	.00	.08	.02	.01	-.00	.70
I feel anxious when I think about our sexual relationship	.78	.00	-.07	.05	.02	.02	-.05	.08	.04	.05	.00	.03	.03	.03	.85
I am stressed about sex	.67	.03	-.03	.03	-.01	-.02	.08	.01	-.04	.00	.01	.05	.04	-.10	.74
	Conflict														
My partner and I get angry with each other	.02	.85	.00	.05	.02	.02	-.02	.01	-.02	-.04	-.01	.01	.07	.03	.77
My partner and I regularly argue	.00	.85	-.00	-.05	.02	-.02	-.01	.00	.04	.02	.01	.01	-.04	-.03	.73
My partner and I get annoyed with each other over little things	-.02	.76	-.03	.03	-.01	.03	.06	.01	.00	.06	.03	.01	-.01	.00	.69
	Initiation														
I do not initiate sex with my partner anymore	.01	-.00	-.94	-.02	-.01	.03	.01	-.01	.02	-.02	-.03	-.00	.00	.01	.86
I rarely bother to approach my partner for sex	-.01	.02	-.87	.01	.02	-.02	-.00	.02	-.01	.03	.05	-.01	.02	-.02	.87
	Guilt														
I feel guilty because I can not sexually satisfy my partner	-.01	-.08	-.09	.67	.02	.01	.06	.07	-.00	.07	.02	.13	-.00	-.04	.67
I feel guilty for letting my partner down	.05	.10	.03	.56	.02	.04	-.01	-.03	.04	-.03	.01	-.04	.02	-.06	.48
	Infidelity														
I am worried that my partner has been unfaithful	-.02	.00	-.01	-.05	.90	-.02	.00	.03	-.02	-.02	.02	.03	.02	.01	.79
I am worried that my partner will be unfaithful	.02	.01	.01	.06	.86	.03	.00	-.03	.03	.03	-.03	-.02	-.02	-.01	.80
	Body Image														
I feel undesirable to my partner	.04	-.00	-.00	.02	.00	.89	-.00	.03	.02	-.00	.00	.03	.02	.02	.93
I feel unattractive to my partner	-.00	.01	-.02	.01	.01	.92	.01	-.01	-.01	.02	-.00	.01	-.00	-.04	.92
	Predictability														
Our sex is routine or predictable	.02	-.01	-.00	-.03	.03	-.00	.78	-.02	.00	-.00	-.02	-.02	-.00	-.02	.58
There is not much variety when we have sex	-.01	.04	-.02	.06	-.04	.01	.73	.05	.02	.02	.04	.04	.03	.03	.70

	Communication														
My partner and I do not talk about sex	-.07	.01	.02	-.09	.05	.10	.06	.68	-.01	.03	.13	-.01	.09	-.02	.72
I avoid talking about sex with my partner	.11	.03	-.07	.10	-.01	-.03	.01	.70	.04	.04	-.06	.02	-.01	-.02	.69
	Security														
I am worried that our relationship might end	-.00	-.04	.00	.05	.02	.02	.01	-.01	.89	-.01	.06	-.02	-.00	-.02	.83
I am questioning the strength of our relationship	.01	.07	-.02	-.05	.00	-.01	.01	.02	.82	.03	-.04	.05	.05	.01	.85
	Physical affection														
We don't hug and kiss as much as we used to	.01	.03	.03	-.03	-.00	-.01	-.01	.04	.05	.83	-.07	.01	.04	-.02	.75
We are not as physically affectionate as we used to be	.01	.00	-.04	.03	.01	.03	.03	-.03	-.03	.80	.10	-.00	-.00	.01	.78
	Hopelessness														
I wish more effort was made to fix our sexual problems	.03	.03	-.01	-.02	.0	.06	.01	.02	.04	.04	.75	.04	.03	.00	.81
I feel frustrated that I can't fix our sexual problems	.11	.01	.05	.07	.01	-.03	.03	.04	.03	.02	.68	.05	.04	-.06	.83
	Self-esteem														
I have lower confidence because of our sexual problems	-.01	.00	-.01	.02	.01	-.01	-.01	.02	.01	.01	.00	.93	.02	-.00	.92
I have lower self-esteem because of our sexual problems	.04	.02	.02	-.02	.01	.05	.01	-.03	.01	-.02	.03	.87	-.00	-.02	.90
	Relationship Quality														
My relationship has become more like a friendship	.00	-.03	-.01	.03	-.00	.03	.03	-.03	.00	.02	.03	-.00	.88	.01	.84
My partner and I feel more like flat mates or colleagues	.02	.04	-.01	-.03	.01	-.02	-.02	.05	.03	.01	-.02	.01	.83	-.02	.81
	Normalness														
I worry there is something wrong with me sexually	.02	-.01	-.02	.13	.02	-.03	-.02	-.03	-.04	.02	.02	.02	.04	-.76	.73
I do not feel normal when I compare myself sexually to others	.02	.01	-.02	-.08	-.01	.08	.03	.05	.06	.01	.01	.04	-.00	-.72	.69

Note. Loadings are taken from the pattern matrix after oblique rotation. The largest loading for each variable is in bold.

Confirmatory Factor Analysis

Assumptions of distributional normality are not reported here as experts in CFA state that Likert scales should not be considered continuous variables (Floyd & Widaman, 1995). The CFA model with 14 latent subscales demonstrated an adequate fit across multiple fit indices. The chi-square test is known to reject the model when the sample size is larger because even small amounts of covariance may become significant (Floyd & Widaman, 1995), and this was the case in this example, $\chi^2(314) = 873.10, p < .001$. The comparative fit index (CFI) and the normed fit index (NFI) range from 0 to 1, with higher values reflecting a better fit. The SaRDS reported a CFI of .97 and a NFI score of .95 respectively. The Root mean square error of approximation (RMSEA = .05) is a good indicator of model fit in this example, as it is not affected by sample size and was below the recommended cut-off of .06. Initial measure invariance was examined, and the 30 items showed good fit across two groups when tested for men and women, indicating configural invariance ($\chi^2(628) = 1248.48, p < .001$, CFI = .96, NFI = .93, RMSEA = .04). Configural invariance is an indication that men and women conceptualise the constructs measured in the same way and that the data for each group would conform to the same items within the same number of factors (Cheung & Rensvold, 2002; Meredith, 1993). These model fit indices when considered together, suggest that the factor structure of the SaRDS is likely to be replicable across other similar samples.

Psychometric Properties

Table 3 outlines the full scale and subscale items, range, reliabilities, means, standard deviations and correlations of the overall measure and subscales. Reading level required for the final measure was assessed with an online tool (readable.io) which rated

the SaRDS as a Flesch-Kincaid reading level of Grade 3.9, meaning that it will be able to be accurately completed by

Table 3
Subscale Items, Range, Reliabilities, Means, Standard Deviations, and Correlations (N = 1192)

SaRDS subscale	Items	Range	α	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Anxiety	1,2,3	0-18	.90	5.14	5.84	1	.34**	.44**	.47**	.25**	.53**	.42**	.46**	.59**	.43**	.66**	.70**	.61**	.54**
2. Conflict	4,5,6	0-18	.88	6.31	5.38	.34**	1	.26**	.29**	.33**	.50**	.27**	.27**	.33**	.44**	.31**	.30**	.24**	.44**
3. Initiation	7,8	0-12	.93	4.02	4.18	.44**	.26**	1	.38**	.16**	.33**	.43**	.51**	.36**	.51**	.46**	.37**	.46**	.53**
4. Guilt	9,10	0-12	.70	3.98	3.75	.47**	.29**	.38**	1	.22**	.29**	.23**	.25**	.28**	.26**	.33**	.39**	.54**	.26**
5. Infidelity	11,12	0-12	.87	1.71	2.93	.25**	.37**	.16**	.22**	1	.40**	.11**	.21**	.32**	.14**	.19**	.26**	.23**	.24**
6. Security	13,14	0-12	.91	3.26	4.01	.53**	.50**	.33**	.29**	.40**	1	.31**	.39**	.47**	.44**	.48**	.48**	.38**	.58**
7. Predictability	15,16	0-12	.77	5.86	3.60	.42**	.27**	.43**	.23**	.11**	.31**	1	.46**	.37**	.46**	.47**	.34**	.33**	.46**
8. Communication	17,18	0-12	.78	2.85	3.40	.46**	.27**	.51**	.25**	.21**	.39**	.46**	1	.44**	.52**	.48**	.34**	.39**	.55**
9. Body Image	19,20	0-12	.96	3.98	4.24	.59**	.33**	.36**	.28**	.32**	.47**	.37**	.44**	1	.46**	.60**	.68**	.49**	.51**
10. Physical Affection	21,22	0-12	.87	5.24	4.43	.43**	.44**	.51**	.26**	.14**	.44**	.46**	.52**	.46**	1	.52**	.36**	.34**	.64**
11. Hopelessness	23,24	0-12	.87	5.36	4.28	.66**	.31**	.46**	.33**	.18**	.48**	.47**	.48**	.60**	.52**	1	.65**	.48**	.55**
12. Self-esteem	25,26	0-12	.95	3.46	4.14	.70**	.30**	.37**	.39**	.26**	.48**	.34**	.34**	.68**	.36**	.65**	1	.57**	.44**
13. Normalness	27,28	0-12	.81	3.69	3.91	.61**	.24**	.46**	.54**	.23**	.38**	.33**	.39**	.49**	.34**	.48**	.57**	1	.38**
14. Relationship Quality	29,30	0-12	.90	3.52	4.00	.54**	.44**	.53**	.26**	.24**	.58**	.46**	.55**	.51**	.64**	.55**	.44**	.38**	1
TOTAL SCORE	1-30	0-180	.95	58.37	39.39														

Note. SaRDS = Sexual and Relationship Distress Scale.

* $p < .05$ ** $p < .001$.

the majority of adults. As is evident from Table 3, the total scale of the SaRDS demonstrated a Cronbach's alpha of .95, with individual subscale reliabilities ranging from .70 to .96.

In order to assess convergent validity, the SaRDS was correlated with both the FSDS-R and the CSI-16 as they are current gold standard measures of sexual distress and relationship satisfaction. Discriminant validity of the SaRDS' total score was assessed against the DASS-21. It was found that the SaRDS correlated significantly and in the expected directions with the FSDS-R, $r = .82, p < .001$, CSI, $r = -.69, p < .001$, DASS-21, $r = .37, p < .001$. Table 4 presents mean total and sub-scale scores across participants who reported different types of sexual difficulties, and it can be seen that participants who reported the presence of a sexual difficulty scored higher on the SaRDS than the overall sample.

Table 4
Means and Standard Deviations for Sub-Populations by Sexual Difficulty

	Full sample (N=1192)		Lacked interest (N=459)		Unable to orgasm (N=253)		Orgasm too quickly (N=195)		Pain during intercourse (N=223)		Difficulties with erections (N=78)		Vaginal dryness (N=202)	
SaRDS subscale	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total	58.37	39.39	73.44	37.57	71.80	38.83	69.31	40.70	67.38	40.04	79.90	39.65	71.18	38.94
Anxiety	5.14	5.84	6.44	5.58	6.18	5.91	6.44	6.09	6.39	6.34	8.27	6.37	6.17	6.17
Conflict	6.31	5.38	7.52	5.58	7.58	5.75	7.38	5.39	6.98	5.51	8.06	5.68	7.20	5.48
Initiation	4.02	4.18	6.61	4.07	5.53	4.44	3.88	4.00	5.35	4.26	4.35	4.36	5.97	4.38
Guilt	3.98	3.75	5.64	4.01	5.11	4.06	5.12	4.02	5.49	4.15	5.69	4.10	5.44	4.06
Infidelity	1.71	2.93	1.92	3.01	2.59	3.63	1.99	3.26	2.34	3.46	2.19	3.41	2.19	3.23
Security	3.26	4.01	3.72	4.13	3.99	4.22	3.67	4.05	3.61	4.03	4.88	4.81	3.71	4.08
Predictability	5.86	3.60	6.66	3.45	6.46	3.71	6.46	3.46	5.80	3.64	7.07	3.17	6.62	3.57
Communication	2.85	3.40	3.53	3.63	3.66	3.71	3.39	3.45	2.95	3.45	3.54	3.23	3.46	3.59
Body Image	3.98	4.24	4.40	4.25	4.66	4.41	5.34	4.49	4.27	4.30	6.03	4.42	4.58	4.25
Physical Affection	5.24	4.43	6.80	4.31	6.14	4.59	6.10	4.41	5.48	4.54	6.32	4.55	6.22	4.63
Hopelessness	5.36	4.28	6.07	3.89	6.11	4.02	6.37	4.26	5.49	4.10	7.60	4.14	5.82	4.14
Self-Esteem	3.46	4.14	4.17	4.23	4.25	4.42	4.64	4.43	4.29	4.31	5.49	4.49	4.33	4.28
Normalness	3.69	3.91	5.24	4.20	5.09	4.19	4.45	4.02	5.02	4.33	5.33	3.97	5.15	4.28
Relationship Quality	3.52	4.00	4.71	4.10	4.43	4.22	4.08	4.00	3.90	4.08	5.08	4.09	4.32	4.24

Note. SaRDS = Sexual and Relationship Distress Scale

Discussion

Despite the positive movement within both the research and applied literature to view sexual dysfunction as an issue that often exists within the context of a relationship, the measures currently available were developed at a time when these areas were considered mutually exclusive. This study developed and evaluated, a 30-item, 14-factor measure of sexual and relationship distress (the SaRDS), in order to fill the need for a measure of distress about sexual functioning that could be administered to both males and females and which captured distress at both an individual and relationship level. It is multi-dimensional and can assess 14 distinct yet related types of distress as well as provide a total score for both males and females. Unlike most researcher-derived measures in this field, the SaRDS followed a bottom-up approach, with items emerging from a series of interviews with the target population. As research efforts into the cross-over between sexual functioning and relationship functioning accelerate, it is important to have valid and reliable tools to measure the impact of these issues.

In order to develop the SaRDS, the EFA produced a 30-item, 14 factor measure that was validated by CFA with good internal consistency, convergent validity and discriminant validity. This factor structure was validated in the second split-half sample using a confirmatory factor analysis. Psychometric validation was conducted in the third study, with reliability and validity analyses supporting the SaRDS as an internally consistent assessment tool that measures the desired construct. Importantly, the SaRDS was significantly correlated with existing measures of sexual and relationship distress, while being correlated to a lesser extent with an existing measure of general psychological distress.

The SaRDS has several advantages over existing measures. By design, this measure is brief enough to be useful in both research and clinical settings, while the subscales allow

for greater breadth of information than most existing scales that provide only a total score. The subscales of the SaRDS tap into elements of interpersonal distress (e.g. Anxiety, Guilt and Hopelessness), negative cognitions about self (e.g. Body Image, Self-Esteem and Normalness), negative cognitions about their relationship (e.g. Infidelity, Security, Predictability, and Relationship Quality) and behaviour change within the relationship (e.g. Conflict, Initiation, Communication, and Physical Affection).

When interpreting these results, it is important to be aware of some of the methodological limitations. The current study used a convenience community sample that was skewed towards highly educated and high-functioning individuals. Although the sample was varied, it would be beneficial in future to further analyse this measure with both clinical, non-clinical and specialised sample groups. It would also be advantageous to assess the measure's test-retest reliability and sensitivity to change in future studies, as well as the cut-off score and invariance across sexual orientation and sexual dysfunction status. Clinicians using this measure should consider the impact of response bias when using the SaRDS in applied settings, as individuals may alter their responses if they believe that their answers may be viewed by their partner. Thus, ensuring that responses to individual items remain confidential will be paramount in the clinical context. Finally, this research used only individuals' responses that were not matched to partners' responses in any way. Future research would benefit from administering the SaRDS to both members of a couple in order to determine whether scores can be combined in any useful way to provide more information.

Conclusions

In conclusion, this study indicates that the SaRDS may be a valuable tool for assessing both individual and relationship distress in the context of sexual difficulties. The

measure has excellent applied utility, providing clinicians with 14 ‘domains’ of distress for individuals and couples to help focus and individualise treatment. In research settings, it is hoped that the SaRDS and its subscales will potentiate more detailed understanding of the predictors and correlates of distress resulting from sexual difficulties, and as such, help guide more effective treatments for individuals and couples experiencing distressing sexual difficulties in the future.

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CHAPTER 9

SEXUAL AND RELATIONSHIP DISTRESS SCALE

This chapter includes a co-authored paper, which has been accepted for publication. The bibliographic details of the paper are:

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My contribution to the paper involved: initial concept and review design; literature search and review of relevant research; data collection and data analysis; and manuscript preparation.

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Sexual and Relationship Distress Scale

The Sexual and Relationship Distress Scale (SaRDS; 30 items) is the first measure of its kind, assessing the distress and consequences experienced by individuals when there are sexual problems within their relationship (Frost & Donovan, 2018a; under review). This measure provides information about the types and severity of distressing outcomes resulting from sexual difficulties, and can be completed by either or both members of a couple. The SaRDS is unique in its ability to assess not only individual distress, but also the consequences of sexual difficulties at the relationship level. The 14 brief subscales and total score are applicable in both research and clinical settings.

Development

An item pool was generated following in-depth qualitative interviews with thirteen couples aged 18 – 65 years, who were in long-term relationships and who were experiencing problems with sexual desire (Frost & Donovan, 2018b; under review). Transcripts were thematically analysed and multiple items (a total of 73) were created to represent each of the 29 original themes. The original items were completed by a large sample of participants using online survey methodology in order to determine the underlying factor structure. An exploratory factor analysis was conducted with a sample of 714 individuals in relationships of 6 months or longer, which resulted in an initial 17-factor solution that did not meet the criteria of factor loadings greater than .4, cross-loadings lower than .4, and theoretical stability. After multiple rounds of iterations following these criteria, a 14-factor solution was determined, optimizing theoretical and mathematical

sense, that was then pruned to include only items reaching a threshold of factor loadings $> .6$. The final solution included the following factors: Anxiety, Conflict, Initiation, Guilt, Infidelity, Security, Predictability, Communication, Body Image, Physical Affection, Hopelessness, Normalness, and Relationship Quality.

A sample of 667 individuals who were involved in relationships of 6 months or longer were used to conduct a confirmatory factor analysis on the remaining 30 items. The measure demonstrated adequate fit ($CFI = .97$, $NFI = .95$, $RMSEA = .05$). Initial measure invariance was examined, and the 30 items showed good fit across two groups when tested for men and women, indicating configural invariance ($\chi^2(628) = 1248.48$, $p < .001$, $CFI = .96$, $NFI = .93$, $RMSEA = .04$).

Response Mode and Timing

This measure can be completed online or using paper and pencil in approximately 5 minutes. Participants report on the previous month and indicate their agreement with the items on a 7-point scale from 0 (*Not at all true of me*) to 6 (*Completely true of me*).

Scoring

No items are reverse scored. The summed items for each subscale provide information about the areas of individual or relationship functioning that are most impacted by sexual difficulties, with higher scores indicating greater distress. The total score is computed by adding the responses to all 30 items and can range from 0 to 180, with higher scores indicating greater distress. A higher score may indicate either a greater breadth of consequences, or more distress relating to each item. Therefore, the measure should always

be examined at the item and subscale levels rather than using the total score alone. Table 1 provides useful scoring information such as the items, range, mean and standard deviation for each subscale.

Table 1

Subscale and total score items, range, internal reliability, means and standard deviations

SaRDS subscale	Items	Range	α	<i>M</i>	<i>SD</i>
1. Anxiety	1, 2, 3	0 - 18	.90	5.14	5.84
2. Conflict	4, 5, 6	0 - 18	.88	6.31	5.38
3. Initiation	7, 8	0 - 12	.93	4.02	4.18
4. Guilt	9, 10	0 - 12	.70	3.98	3.75
5. Infidelity	11, 12	0 - 12	.87	1.71	2.93
6. Security	13, 14	0 - 12	.91	3.26	4.01
7. Predictability	15, 16	0 - 12	.77	5.86	3.60
8. Communication	17, 18	0 - 12	.78	2.85	3.40
9. Body Image	19, 20	0 - 12	.96	3.98	4.24
10. Physical Affection	21, 22	0 - 12	.87	5.24	4.43
11. Hopelessness	23, 24	0 - 12	.87	5.36	4.28
12. Self-esteem	25, 26	0 - 12	.95	3.46	4.14
13. Normalness	27, 28	0 - 12	.81	3.69	3.91
14. Relationship Quality	29, 30	0 - 12	.90	3.52	4.00
TOTAL SCORE	1 - 30	0 - 180	.95	58.37	39.39

Reliability

In a sample of 1192 adults in long-term relationships, the Cronbach's alpha for the SaRDS was .95, indicating excellent internal reliability.

Validity

Convergent validity was assessed in the same sample of adults in long-term relationships (N=1192) with Pearson's correlation assessing the relationship between the

total score on the SaRDS and the total scores on measures of sexual distress (Female Sexual Distress Scale - Revised (FSDS-R; (DeRogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008) and relationship functioning (Couples Satisfaction Index (CSI); (Funk & Rogge, 2007). As anticipated, the SaRDS was highly correlated with the FSDS-R ($r = .82$) and slightly less correlated with the CSI ($r = -.69$). The Depression Anxiety and Stress Scale 21-item (DASS-21); (Henry & Crawford, 2005) showed low correlation with our measure (.37), indicating that it is not just capturing general psychological distress (Frost & Donovan, 2018a; under review).

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CHAPTER 10 - GENERAL DISCUSSION

Sexual dysfunctions and disorders are highly prevalent and distressing for many of the individuals who suffer with them, as well as their partners. However, despite being central to diagnosis and the patient experience, the distress within the context of sexual problems has received little research attention as a construct. Furthermore, sexual distress has historically been considered from the perspective of the individual, despite the established knowledge that sexual dysfunction also impacts upon the partner and the relationship satisfaction of both people in the relationship.

In line with the scant empirical attention paid to sexual distress, is the dearth of research into its measurement. Although psychometrically valid and reliable measures of sexual distress exist, they have been designed for use by women only, sometimes for a specific dysfunction, and rarely to investigate relationship factors. Furthermore, none of the current measures of sexual distress include subscales, thus limiting the measurement of outcomes and research questions to those that can be answered with a general distress score.

Overall Aims

The present program of research aimed to both summarise and extend the research conducted on sexual distress through a series of four papers. The first paper presented here aimed to broadly summarise, and put forward a position on, the current literature regarding distress related to low sexual desire in women. The paper concluded that low sexual desire in women can be a normative process for many individuals and can be the result of a range of individual and situational life stressors including physical health concerns, the stresses of parenting, and relationship factors among others. It highlighted the well-established fact that not all individuals with sexual dysfunctions are

distressed, and that not all individuals who are sexually distressed are experiencing sexual problems. Given the poor treatment outcomes for women with low sexual desire, it was proposed that in cases where the symptoms may be functional and normative, it could be useful to target the distress itself in treatment. Supported by prior empirical work, the paper also put forward the position that sexually-related distress is important in the aetiology, maintenance and treatment of sexual dysfunctions in general, and low sexual desire in particular. It went on to conclude however, that our current understanding of how distress is experienced, and our ability to holistically and inclusively measure the construct, are limited, highlighting the importance of undertaking basic foundational research to investigate sexual distress.

Chapter 7 presented a study that has been submitted for publication in the *Journal of Sexual and Relationship Therapy*. The study was qualitative in nature, with an overall aim of gaining an in-depth understanding of the distress and consequences associated with female sexual desire as experienced by the women, their male partners, and the relationship more generally. The study was the first of its kind to gather information from higher desire partners (all men in this study), and to investigate not only individual consequences, but relationship consequences as well.

The qualitative data collected from interviews with 13 couples, produced 29 distinct themes of sexual and relationship distress that spanned behavioural, cognitive, emotional and relationship domains. The impact on the relationship was heavily emphasised by all participants, and many of the themes, even when seemingly intrapersonal in nature (for e.g. experiencing guilt, feeling low self-esteem), were frequently reported as occurring due to real or assumed partner responses. Of particular interest was the finding that both women and men reported strikingly similar themes of distress. It appears that there is a

common experience of distress, regardless of whether an individual has the sexual dysfunction or whether they are in a relationship where these problems are present.

Of the many implications that can be drawn from the results of this study, perhaps the most important is the necessity of taking a couples approach to the future treatment of, and research investigating, low sexual desire in women. Low sexual desire clearly impacts not only the individual afflicted, but also the partner and their relationship. Clinicians working with this presentation could benefit from including the partner and working from a framework that allows the couple to work through their difficulties together.

Both the position paper presented in Chapter 6 and the qualitative study presented in Chapter 7, highlight the importance of distress and the couple in sexual dysfunction, and the lack of adequate measurement of these facets of sexual dysfunction in the literature. Chapter 8 presents a study that aimed to create a new psychometrically validated measure of sexual distress that not only captured the relationship aspects, but that more closely aligns with the experiences of individuals suffering from sexual problems within their relationship. The resulting Sexual and Relationship Distress Scale (SaRDS) was a 30-item, 14-factor measure that demonstrates good validity and reliability, as well as a low reading level and gender invariance. The measure has excellent utility for the assessment of sexual distress, the tracking of outcomes in clinical treatment of sexual dysfunctions, and the measurement of outcomes of treatment trials. Chapter 8 presents the SaRDS as it will be included in the Journal of Sexual Medicine and Chapter 9 as within the Handbook of Sexuality-Related Measures.

Synthesis of the Findings from the Compendium of Studies

When drawing together the findings from these studies, it is clear that sexual dysfunctions cause substantial individual and relationship distress, and that the distress

itself is multifaceted in nature. The 29 themes that emerged from the qualitative study were found to reflect 14 factors within the psychometric study, suggesting that the distress reported by the couples in this study could be generalised to the wider population. Although the themes / factors are unique and distinct from each other, a consistent picture emerged where distress was often seen to occur as the result of real or assumed partner thoughts, emotions and behaviours, as well as the impact felt on the relationship itself.

Another important finding is that, unlike common societal beliefs, men and women do not experience sexual problems in their relationships very differently. The data from the qualitative study suggested that the themes were reported with similar frequency by both genders. Similarly, the psychometric study outlining the development and psychometric properties of the SaRDS demonstrated gender invariance, indicating that the underlying factor structure was relevant to both men and women in a much larger sample.

Finally, the series of papers culminated in the development of the SaRDS, a new psychometrically validated measure of sexual and relationship distress. It was found that the construct of sexual distress is measurable not only as a whole, but also in a format that includes subscales or more specific domains of distress. This is particularly important as historically, sexual distress has been measured as a single construct and research has therefore been unable to disentangle the different types of distress that may be felt by individual and couples.

Overall implications

There are a number of important research and clinical implications arising from this program of research. Given the dearth of foundational understanding and measurement of sexual distress, it is hoped that the findings from this thesis will prompt an increase in

research dedicated to the distress associated with sexual dysfunction research, an area that has been largely neglected to date. In addition, clinicians who are working with individuals suffering from sexual dysfunctions should pay greater attention to the relationship within which these problems occur. The results of this research support previous literature finding that relationship factors are strong correlates of sexual distress, and that partner factors are often the most distressing (even if not the most frequent) consequence. Thus, this research highlights the importance of the partner being present in the treatment of sexual dysfunctions, either for the purposes of education, or to incorporate couples therapy within traditional sex therapy.

Perhaps the most important implication of this research however, is the development of the SaRDS that will prove useful in both clinical and research settings. Clinically, the SaRDS will allow for more thorough assessment of sexual distress in patients with sexual dysfunctions, as well as their partners. The 14 subscales will allow the clinician to not only score the overall distress experienced for the purposes of an outcome measure assessing severity, but will also assist them to determine the various types of distress being experienced, in order to inform case conceptualisations and treatment plans. With respect to research, the SaRDS may be used as a patient reported outcome (PRO) scale in new drug and psychotherapeutic treatment trials for sexual dysfunction, and can be used to answer a myriad of research questions using the total and subscale scores.

Overall strengths and limitations

The strengths and limitations of each of the studies were presented in Chapters 7 and 8 and will not be repeated here. Instead, this discussion will focus on the strengths and limitations of the program of research as a whole.

One of the strengths of this program of research was its novelty and the way in

which the psychometric study built upon the qualitative study. Indeed, there were a number of ‘firsts’ associated with this program of research. It included the first qualitative study to conduct in-depth interviews not only with women who have low sexual desire, but also their partners. It included the development and psychometric evaluation of the first measure of sexual distress to provide both subscale and total scores, and that was designed for use with sexually dysfunctional individuals and their partners.

A second strength of the research program was the use of a mixed methods design, using a bottom-up, patient informed approach to create a measure developed upon the experiences reported by participants in the earlier qualitative study. The adequacy of any PRO is reliant on the quality of its development, and it is understood that items derived from qualitative research is the gold standard. The fact that the quantitative study built upon the qualitative study with similar results supports the generalization of the qualitative findings.

Despite the strengths of these studies, there were also a number of limitations. One limitation was the use of only participants with low sexual desire for the qualitative study, rather than a larger sample with participants experiencing a wider range of sexual dysfunctions. In the same vein, although it was outside the scope of the current program of study, it would have been ideal for the qualitative study to have included men with and without sexual dysfunctions and same-sex couples. The development of items for the measure created for the quantitative study relied upon the themes from the qualitative study and may therefore not be entirely representative of all sexual dysfunctions and sexual orientations. This does not seem to be the case from initial validation analyses, but cannot be determined with certainty until measure invariance across sexual dysfunction and sexual orientation is conducted in a future study.

Concluding Comments

This series of research studies was intentionally foundational in nature to provide a springboard for much needed future research investigating the distress experienced by individuals and relationships where one or both of the partners has a sexual dysfunction. The use of a mixed methods design to gain an in-depth understanding of sexual and relationship distress in relationships, and the subsequent creation of a new valid and reliable measure of distress, has met this need. It is hoped that this program of research will be used to inform future research as well as clinical practice, so that the distress suffered by those with sexual dysfunctions can be better understood and alleviated.

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APPENDICES

Appendix A

Study 1 Ethical Clearance from Griffith University

GRIFFITH UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE

13-Mar-2013

Dear Mrs Frost

I write further to the additional information provided in relation to the provisional approval granted to your application for ethical clearance for your project "Investigation of the distress experienced by couples with mismatched sexual desire." (GU Ref No: PSY/E5/12/HREC).

The additional information was considered by Office for Research.

This is to confirm that this response has addressed the comments and concerns of the HREC.

All conditions have been satisfied.

Consequently, you are authorised to immediately commence this research on this basis.

The standard conditions of approval attached to our previous correspondence about this protocol continue to apply.

Regards

Ms Kristie Westerlaken
Policy Officer
Office for Research
Bray Centre, Nathan Campus
Griffith University
ph: +61 (0)7 373 58043
fax: +61 (07) 373 57994
email: k.westerlaken@griffith.edu.au
web:

Cc:

Researchers are reminded that the Griffith University Code for the Responsible Conduct of Research provides guidance to researchers in areas such as conflict of interest, authorship, storage of data, & the training of research students.

You can find further information, resources and a link to the University's Code by visiting
<http://policies.griffith.edu.au/pdf/Code%20for%20the%20Responsible%20Conduct%20of%20Research.pdf>

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GRIFFITH UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE

01-Apr-2014

Dear Mrs Frost

I write further to your application for a variation to your approved protocol "Investigation of the distress experienced by couples with mismatched sexual desire." (GU Ref No: PSY/E5/12/HREC). This request has been considered by the Office for Research.

The OR resolved to approve the requested variation:

Variation requested as follows:

- 1) to extend recruitment to include advertising via social media.

This decision is subject to ratification at the next meeting of the HREC. However, you are authorised to immediately commence the revised project on this basis. I will only contact you again about this matter if the HREC raises any additional questions or comments about this variation.

Regards

Dr Kristie Westerlaken
Policy Officer
Office for Research
Bray Centre, Nathan Campus
Griffith University
ph: +61 (0)7 373 58043
fax: +61 (07) 373 57994
email: k.westerlaken@griffith.edu.au
web:

Cc:

Researchers are reminded that the Griffith University Code for the Responsible Conduct of Research provides guidance to researchers in areas such as conflict of interest, authorship, storage of data, & the training of research students. You can find further information, resources and a link to the University's Code by visiting <http://policies.griffith.edu.au/pdf/Code%20for%20the%20Responsible%20Conduct%20of%20Research.pdf>

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Appendix B

Study 2 Ethical Clearance from Griffith University

GRIFFITH UNIVERSITY HUMAN RESEARCH ETHICS REVIEW

Dear Dr Caroline Donovan

I write further to the additional information provided in relation to the provisional approval granted to your application for ethical clearance for your project "The Development of a Measure of Desire-Related Distress" (GU Ref No: 2017/116).

This is to confirm that this response has addressed the comments and concerns of the HREC.

The ethics reviewers resolved to grant your application a clearance status of "Fully Approved".

Consequently, you are authorised to immediately commence this research on this basis.

Regards

Kim Madison | Human Research Ethics

Office for Research
Griffith University | Nathan | QLD 4111 | Level 0, Bray Centre (N54)
T +61 7 373 58043 | email k.madison@griffith.edu.au

GRIFFITH UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE

Dear Dr Caroline Donovan

I write further to your application for a variation to your approved protocol "The Development of a Measure of Desire-Related Distress" (2017/116). This request has been considered by the Office for Research.

The OR resolved to approve the requested variation:

- 1) To change the participant age range from 18-65 years to 18+ years.
- 2) To include the additional sexual function survey questions provided to the Office for Research on 03/04/2017.

This decision is subject to ratification at the next meeting of the HREC. However, you are authorised to immediately commence the revised project on this basis. I will only contact you again about this matter if the HREC raises any additional questions or comments about this

variation.

Regards

Kim Madison | Human Research Ethics

Office for Research

Griffith University | Nathan | QLD 4111 | Level 0, Bray Centre (N54)

T +61 7 373 58043 | email k.madison@griffith.edu.au

Appendix C

Study 1 Information Sheet and Consent Form



School of Applied Psychology
Mt Gravatt Campus

The Distress and Consequences Resulting from Low Sexual Desire.

INFORMATION SHEET

Who is conducting the research?

Dr. Caroline Donovan (Clinical Psychologist)
Mrs Rebecca Frost (Psychologist and PhD Student)
Griffith University - Mt Gravatt Campus
School of Psychology
176 Messines Ridge Road,
Mt Gravatt, QLD 4122
Contact Phone: (07) 3735 3401
Contact Email: c.donovan@griffith.edu.au

Why is the research being conducted?

This research will investigate the consequences and distress felt when one member in a couple experiences lower sexual desire than the other. Low sexual desire is the most frequent reason for individuals or couples to access psychological services for a sexual difficulty yet it is a problem that we still understand relatively little about. In particular, the impact on both members of a couple have not been examined, despite the importance for the relationship's longevity.

This research is being conducted as part of Rebecca Frost's PhD Thesis under the guidance of Dr. Caroline Donovan. As a token of our appreciation, we will be offering a \$50 gift voucher to participants who complete the study.

The basis by which participants will be selected

To participate in this study, we are looking for individuals who have been in a heterosexual relationship for 6 months or longer and where the female has lower sexual desire than the male, causing problems or difficulties for either one or both of you.

What you will be asked to do

If you agree to take part in this research, you will first take part in a short screening phone call where we will ask you basic demographic questions and make sure that you are suitable to take part. You will then be contacted to arrange a time to attend an interview with the researchers. These should take between 1 and 1½ hours. You will be asked questions about the impact low sexual desire has had on yourself and your relationship, including any changes in the way you act, think or feel about sex or your partner. There is also a brief questionnaire to complete.

The expected benefits of the research

The results of this research will help us to better understand how mismatched sexual desire affects individuals and couples so that we can better support people impacted by this common issue. Ultimately, this deeper understanding will allow for better education of individuals and professionals about sexual desire, and improve our ability to offer assistance to couples who access psychological assistance for this problem.

Risks to you

There are no expected risks from participating in this study, however some individuals may find discussing their own sexual relationship uncomfortable. Taking part in this study is voluntary and you and your partner may withdraw at any time (including following informed consent) without any negative consequences or prejudice. Below is a list of support services that you may find useful, should you require additional support:

Lifeline:	Phone 13 11 14
Relationships Australia Queensland	1300 364 277
Australian Psychological Association	http://www.psychology.org.au/FindaPsychologist
Griffith University Psychology Clinic:	Phone: (07) 3735 3301 www.griffith.edu.au/health/school-psychology/clinics

Your confidentiality

All information gathered will be kept in locked filing cabinets, will be confidential and will only be accessed by the researchers. Your responses will not be shared with your partner at any time. Any reports arising from this research will include de-identified quotes from interviews or group statistics only. This means that no individual participant will be able to be identified. Your contact details (provided to us during the phone screening and on the consent form), will be used to inform you, in line with our duty of care, if data collected indicates an at-risk mental state.

Once all data has been collected for this study, all identifying information will be replaced with a randomly generated number. This means that your personal responses will not be able to be traced to you. All hard copies of personal information will also be destroyed promptly after this process unless you give permission otherwise. All videos will also be destroyed after data collection is completed (within two weeks), again unless you give

permission otherwise.

Your participation is voluntary

Participation in the research study is entirely voluntary and as mentioned above, you are free to withdraw from the study or refuse to take part at any time, without any negative consequences or prejudice. If you decide to withdraw from this study, both you and your partner's information will not be used and will be destroyed. Participation in the research is valuable to us as it enables researchers to develop effective assistance to couples struggling with the problem of low or mismatched sexual desire.

Questions / Feedback to you

If you have any questions regarding this study, please contact Dr Caroline Donovan by telephone on (07) 3735 3401 or by email: c.donovan@griffith.edu.au. At the end of the study, you are very welcome to contact the researcher for a summary of research results.

The ethical conduct of this research

Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Manager, Research Ethics on (07) 3735 4375 or research-ethics@griffith.edu.au.

Privacy Statement

The conduct of this research involves the collection, access and / or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded, except where you have consented otherwise. For further information consult the University's Privacy Plan at <http://www.griffith.edu.au/about-griffith/plans-publications/griffith-university-privacy-plan> or telephone (07) 3735 5585.



School of Applied Psychology - Mt Gravatt Campus

The Distress and Consequences Resulting from Low Sexual Desire.

CONSENT FORM

Who is conducting the research?

Dr. Caroline Donovan (Clinical Psychologist)

Mrs Rebecca Frost (Provisional Psychologist and PhD Student)
 Griffith University - Mt Gravatt Campus
 School of Psychology
 176 Messines Ridge Road,
 Mt Gravatt, QLD 4122
 Contact Phone: (07) 3735 3401
 Contact Email: c.donovan@griffith.edu.au

By signing below, I confirm that I have read and understood the Information Sheet and in particular have noted that:

- I understand that my involvement in this research will include attending an interview where we will discuss the impact of low sexual desire;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that there will be no direct benefit to me for my participation in this research, apart from the \$50 gift voucher as a thank you for my time;
- I understand that my participation in this research is voluntary and that I am free to withdraw at any time without negative consequences or prejudice, including after the informed consent process and that any information gathered will be destroyed if I do so;
- I understand that if I have any additional questions I can contact the research team;
- I understand that our personal details will be collected for the purpose of contacting us to conduct the interview and to inform us if the data collected indicates an at-risk mental state;
- I understand that the interviews will be video-recorded;
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on (07) 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Name:	
Signature:	
Date:	
Email Address:	
Postal Address:	
Phone / Mobile:	

The following section is optional

I am happy for my personal details to be kept securely on file to be contacted for future research by this researcher only.

Name:

Signature:

I am happy for the video recordings to be kept securely for future use such as training workshops, lectures or other research or education purposes and understand that we will be contacted for permission beforehand.

Name:

Signature:

Appendix D

Study 2: Information Sheet and Consent Form



School of Applied Psychology
Mt Gravatt Campus

The Development of a Measure of Desire-Related Distress.

INFORMATION SHEET

Who is conducting the research?

Dr. Caroline Donovan (Clinical Psychologist)
Mrs Rebecca Frost (Psychologist and PhD Student)
Griffith University - Mt Gravatt Campus
School of Psychology
176 Messines Ridge Road,
Mt Gravatt, QLD 4122
Contact Phone: (07) 3735 3401
Contact Email: c.donovan@griffith.edu.au

Why is the research being conducted?

This research will investigate the consequences and distress felt when one member in a couple experiences lower sexual desire than the other. Low sexual desire is the most frequent reason for individuals or couples to access psychological services for a sexual difficulty yet it is a problem that we still understand relatively little about. In particular, this research will help us to develop a new way of measuring the consequences and distress felt when individuals or couples experience some level of sexual desire difficulty.

This research is being conducted as part of Rebecca Frost's PhD Thesis under the guidance of Dr. Caroline Donovan.

The basis by which participants will be selected

To participate in this study, we are looking for individuals between 18 – 65 years of age who have been in a relationship for six months or longer. It is not necessary for you to be experiencing difficulties with sexual desire as we want to understand how this issue effects everyone, including those with or without sexual desire problems.

What you will be asked to do

If you agree to take part in this research, you will complete an online questionnaire that will ask you a variety of questions about yourself including; your age, gender and other demographic information, your overall level of sexual desire, relationship satisfaction, health, and general psychological functioning.

The expected benefits of the research

The results of this research will help us to better understand how mismatched sexual desire affects individuals and couples so that we can better support people impacted by this common issue. Ultimately, this deeper understanding will allow for better education of individuals and professionals about sexual desire, and improve our ability to offer assistance to couples who access psychological assistance for this problem.

Risks to you

There are no expected risks from participating in this study, however some individuals may find discussing their own sexual relationship uncomfortable. Taking part in this study is voluntary and you may withdraw at any time (including following informed consent) without any negative consequences or prejudice. Below is a list of support services that you may find useful, should you require additional support:

Lifeline:	Phone 13 11 14
Relationships Australia Queensland	1300 364 277
Australian Psychological Association	http://www.psychology.org.au/FindaPsychologist
Griffith University Psychology Clinic:	Phone: (07) 3735 3301 www.griffith.edu.au/health/school-psychology/clinics

Your confidentiality

All information gathered will be kept in locked filing cabinets, will be confidential and will only be accessed by the researchers. Your responses will not be shared with your partner at any time. Any reports arising from this research will include de-identified quotes from interviews or group statistics only. This means that no individual participant will be able to be identified. Your contact details (provided to us during the phone screening and on the consent form), will be used to inform you, in line with our duty of care, if data collected indicates an at-risk mental state.

Once all data has been collected for this study, all identifying information will be replaced with a randomly generated number. This means that your personal responses will not be able to be traced to you. All hard copies of personal information will also be destroyed promptly after this process unless you give permission otherwise. All videos will also be destroyed after data collection is completed (within two weeks), again unless you give permission otherwise.

Your participation is voluntary

Participation in the research study is entirely voluntary and as mentioned above, you are free to withdraw from the study or refuse to take part at any time, without any negative consequences or prejudice. If you decide to withdraw from this study, both you and your partner's information will not be used and will be destroyed. Participation in the research is valuable to us as it enables researchers to develop effective assistance to couples struggling with the problem of low or mismatched sexual desire.

Questions / Feedback to you

If you have any questions regarding this study, please contact Dr Caroline Donovan by telephone on (07) 3735 3401 or by email: c.donovan@griffith.edu.au. At the end of the study, you are very welcome to contact the researcher for a summary of research results.

The ethical conduct of this research

Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Manager, Research Ethics on (07) 3735 4375 or research-ethics@griffith.edu.au.

Privacy Statement

The conduct of this research involves the collection, access and / or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded, except where you have consented otherwise. For further information consult the University's Privacy Plan at <http://www.griffith.edu.au/about-griffith/plans-publications/griffith-university-privacy-plan> or telephone (07) 3735 5585.



School of Applied Psychology - Mt Gravatt Campus

The Development of a Measure of Desire-Related Distress.

CONSENT FORM

Who is conducting the research?

Dr. Caroline Donovan (Clinical Psychologist)
 Mrs Rebecca Frost (Provisional Psychologist and PhD Student)
 Griffith University - Mt Gravatt Campus
 School of Psychology
 176 Messines Ridge Road,
 Mt Gravatt, QLD 4122
 Contact Phone: (07) 3735 3401
 Contact Email: c.donovan@griffith.edu.au


By signing below, I confirm that I have read and understood the Information Sheet and in particular have noted that:

- I understand that my involvement in this research will include completing an online questionnaire where we will ask about the impact of low sexual desire;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that there will be no direct benefit to me for my participation in this research;
- I understand that my participation in this research is voluntary and that I am free to withdraw at any time without negative consequences or prejudice, including after the informed consent process and that any information gathered will be destroyed if I do so;
- I understand that if I have any questions I can contact the research team;
- I understand that my answers are anonymous and I can not be identified;
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on (07) 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Name:	
Signature:	
Date:	
Email Address:	
Postal Address:	

Appendix E


Study 1 Recruitment Materials



Can you help us to learn more about

MISMATCHED LIBIDO?

A GRIFFITH UNIVERSITY STUDY



Please contact Rebecca on (07) 3735 3306 or couples@griffith.edu.au for info

WHAT IS THE STUDY ABOUT?

It is common for women to have considerably lower libido than their male partner and for some couples this is a problem, while for others it is not. Researchers at Griffith University are trying to learn more about mismatched libido and its consequences. We need couples to help us to understand how this issue has affected you and your relationship so that we can help other couples who experience this problem.

Can you help? Your involvement is entirely confidential and you will be interviewed in person by professionals in psychology. We will reimburse your time with a \$50 Coles/Myer gift card.

Not tonight, dear.



75% of men wish they had more sex

Low sexual desire is very common for women, but knowing that doesn't make it any easier. If you are experiencing any upset or consequences as a result of your partner's low libido, researchers at Griffith University would love to hear from you. All you need to do is come to the Griffith University Psychology Clinic and answer a few questions.

Email couples@griffith.edu.au

Facebook: The Couples Study



\$50 gift voucher
for participation

(07) 3735 3306

Appendix F

Study 2 Recruitment Materials



Can you help us to learn more about

MISMATCHED LIBIDO?

A GRIFFITH UNIVERSITY STUDY (HREC 2017/116)



Please contact Rebecca at couples@griffith.edu.au for info

WHAT IS THE STUDY ABOUT?

It is common for individuals to have lower or higher sexual desire than their partner and for some couples this is a problem, while for others it is not. Researchers at Griffith University are trying to learn more about mismatched libido and its consequences by creating new ways of measuring this. We need individuals to help us to understand this very common issue so that we can help other couples who experience this problem.

Your involvement is entirely confidential and you only need to complete an online survey.

<https://prodsurvey.rcs.griffith.edu.au/TheCouplesStudy>

Appendix G

Study 1 Phone Screen Questions

Date_____

Thank you for contacting us about taking part in this study. We are hoping to learn about the impact that low sexual desire has on couples. To take part in this research, you and your partner will need to fill out a short questionnaire package and attend the Griffith University Psychology Clinic at Mt Gravatt for an interview that will take about 1 – 1½ hours. At the clinic, you will speak with our researchers separately and of course, everything that you say will be confidential. We will thank you for your time with a \$50 Coles / Myer gift voucher. There is more information in an information sheet that will be emailed to you if you wish to take part, but do you have any questions before then?

Screening Questions

Female's name? _____

DOB?_____Age?_____

Male's name? _____

DOB?_____Age?_____

Marital status _____ Length of relationship (months) _____

Do you have children? Ages and how many?_____

Does the female have low sexual desire?_____

Has this been for at least one month of the past year?_____

How long has this problem been going on for?_____

Would you say that the differences in your libido cause any problems or upset for you, your partner, or your relationship?_____

Current violence, aggression, or coercion within your relationship?_____

Referral option given?_____

How found out about study?_____

Notes_____

IF SUITABLE FOR STUDY

Phone numbers – Home_____

Female
(mobile)_____ (work)_____

Male
(mobile)_____ (work)_____

Address_____

Email

FOR SAMPLING

How would you rate your general **health** (Female)? Poor Average Excellent

How would you rate your general **health** (Male)? Poor Average Excellent

How would you rate your **stress levels** (Female)? High Average Low

How would you rate your **stress levels** (Male)? High Average Low

How would you rate your level of **fatigue** (Female)? High Average Low

How would you rate your level of **fatigue** (Male)? High Average Low

What is your combined household income?_____

Highest education level (Female): Year 10 Year 12 Trade Qual Bach PostGrad

Highest education level (Male): Year 10 Year 12 Trade Qual Bach PostGrad

Menopausal status : Premenopausal Currently experiencing Postmenopausal

Other notes:

Availability?

☐ Info and consent form sent?

REFERRAL OPTIONS

Relationship Counselling

Dr Jennifer Fitzgerald or Dr Clare Rosoman
St Andrew's Psychology (Spring Hill)
(07) 3831 6058

Miranda Mullins
Psychology Consultants (Morningside)
(07) 3395 8633

Dr Carly Reid
Benchmark Psychology (Upper Mt Gravatt)
(07) 3349 5511

Jacques Rizk
Heart Matters Psychology
City (07) 3012 6210
Kelvin Grove (07) 3353 5430

Relationships Australia
1300 364 277

Domestic Violence

Relationships Australia
1300 364 277

DV Connect Hotline
1800 811 811

Brisbane Domestic Violence Service
(07) 3217 2544

Appendix H

Study 1 Semi-Structured Interview (Men)

Instructions: We are trying to understand the consequences or side-effects of being in a couple where the female has low sexual desire. By low desire, we are describing periods where your partner has experienced little to no desire for sexual activity of one kind or another. For some couples this may last a relatively short period, such as a month every now and again, for others this may be due to a change of life circumstances like stress, illness, or having children, while with some couples this is a long-term problem. We are hoping that you would be able to describe to us in as much detail as possible, how having problems with desire within your relationship effects you and your partner, including how you behave, think and feel so that in future we may be able to assist couples to experience less conflict and emotional pain when low desire becomes a problem within their relationship. We have some guide questions to help us to talk about this issue but we would like you to please talk as freely and openly as you feel comfortable and to add anything that is important to you.

First impressions:

Let's begin with you just describing in your own words what impact you think problems with sexual desire has had on you (repeat for partner / relationship).

General

14. Since experiencing mismatched desire, could you please explain how your relationship has changed? For the better? For the worse? What do you notice that is different to before?
15. If you experience periods where she has low desire, do you notice differences in your relationship compared to when her desire is greater? For the better? For the worse?
16. Could you please describe how you and your partner communicate about her low desire?
17. If you could fully explain your feelings to your partner without hurting her feelings or upsetting her in any way, what would you say?
18. What do you think she would say to you?
20. If I could wave a magic wand and make it so that you would experience the same level of desire, at the same time, what would be different?

Behaviour

1. Please describe how you behave when you initiate sexual contact but your partner does not feel desire? How does she respond?
2. Over time, can you describe how you behave differently towards your partner due to the mismatch in your desire? What is the impact of this on your partner / your relationship?
3. Please describe how your partner behaves when you initiate sexual contact but she does not feel desire? How do you respond?
4. Over time, how has your partner's behaviour towards you changed as a result of the mismatch in your desire?
5. Can you please describe your emotions when either you or your partner's behaviour changes as a result of her low desire?

Cognitions

6. Please describe your thoughts when you initiate sexual contact but your partner does not feel desire?
7. What do you believe that your partner is thinking when you initiate sexual contact but she does not feel desire?
8. Have you and your partner ever discussed your thoughts about this issue? Could you please tell us how this discussion usually takes place and the outcome?

Emotions

9. How do you feel when you initiate sexual contact but your partner does not feel desire?
10. How have these feelings changed over time? What emotions do you feel towards your partner in relation to your mismatched desire?
11. How do you think your partner feels when you initiate sexual contact but she does not feel desire?
12. Have you noticed any changes in the way your partner expresses her feelings about the desire mismatch? How do you think she feels towards you in relation to your mismatched desire?
13. Have you and your partner ever discussed your feelings about this issue? Could you please tell us how this discussion usually takes place and the outcome?

Appendix I

Study 1 Semi-Structured Interview (Women)

Instructions: We are trying to understand the consequences or side-effects of being in a couple where the female has low sexual desire. By low desire, we are describing periods where you have experienced little to no desire for sexual activity of one kind or another. For some couples this may last a relatively short period, such as a month every now and again, for others this may be due to a change of life circumstances like stress, illness, or having children, while with some couples this is a long-term problem. We are hoping that you would be able to describe to us in as much detail as possible, how having low desire effects you and your partner, including how you behave, think and feel so that in future we may be able to assist couples to experience less conflict and emotional pain when low or mismatched desire becomes a problem within their relationship. We have some guide questions to help us to talk about this issue but we would like you to please talk as freely and openly as you feel comfortable and to add anything that is important to you.

Initial impressions:

Let's begin with you just describing in your own words what impact you think problems with sexual desire has had on you (repeat for partner / relationship).

General

13. Have you and your partner ever discussed your feelings about this issue? Could you please tell us how this discussion usually takes place and the outcome?
14. Since experiencing low desire, could you please explain how your relationship has changed? For the better? For the worse? What do you notice that is different to before?
15. If you experience periods of low desire, do you notice differences in your relationship compared to when your desire is higher? For the better? For the worse?
16. Could you please describe how you and your partner communicate about your mismatched desire?
17. If you could fully explain your feelings to your partner without hurting his feelings or upsetting him in any way, what would you say?
18. What do you think he would say to you?
20. If I could wave a magic wand and make it so that you would experience the same level of desire, at the same time, what would be different?

Behaviour

1. Please describe how you behave when your partner initiates sexual contact if you do not feel desire? How does he respond? What is the impact on your relationship?
2. Over time, can you describe how you behave differently towards your partner due to the desire problems?
3. Please describe how your partner behaves when he initiates sexual contact but you do not feel desire? How do you respond?
4. Over time, how has your partner's behaviour towards you changed as a result of the mismatch in your desire? What impact has this had on you / your relationship?
5. Can you please describe your emotions when either your or your partner's behaviour changes as a result of low desire?

Cognitions

6. Please describe your thoughts when your partner initiates sexual contact when you do not feel desire?
7. What do you believe that your partner is thinking when he initiates sexual contact but you do not feel desire?
8. Have you and your partner ever discussed your thoughts about this issue? Could you please tell us how this discussion usually takes place and the outcome?

Emotions

9. How do you feel when your partner initiates sexual contact but you do not feel desire?
10. How have these feelings changed over time? What emotions do you feel towards your partner in relation to your low desire?
11. How do you think your partner feels when he initiates sexual contact but you do not feel desire?
12. Have you noticed any changes in the way your partner expresses his feelings about your low desire? How do you think he feels towards you in relation to your mismatched desire?

Appendix J**Study 1 Demographic Questions**

Date_____ Participant ID_____ Interviewer_____

Demographics

1. Your age _____years
2. Marital status (please circle) dating defacto married
3. How many children do you and your partner have together? _____
4. What are the ages of your children? _____
5. When did your relationship begin (month / year)?_____
6. What is your combined household income?_____
7. What is your highest educational qualification attained (please circle)
Grade 10 Grade 12 Trade qualification Undergraduate Degree Postgraduate

Appendix K

Sexual Desire Inventory (SDI)

Sexual Desire Inventory

This questionnaire asks about your level of sexual desire. By desire, we mean interest in or wish for sexual activity. For each item, please circle the number that best shows your thoughts and feelings. Your answers will be private and anonymous.

1. During the last month, how often would you have liked to engage in sexual activity with a partner (for example, touching each other's genitals, giving or receiving oral stimulation, intercourse, etc.)?

- | | |
|-------------------------|-------------------------|
| 0) Not at all | 4) Twice a week |
| 1) Once a month | 5) 3 to 4 times a week |
| 2) Once every two weeks | 6) Once a day |
| 3) Once a week | 7) More than once a day |

2. During the last month, how often have you had sexual thoughts involving a partner?

- | | |
|--------------------------|----------------------------|
| 0) Not at all | 4) 3 to 4 times a week |
| 1) Once or twice a month | 5) Once a day |
| 2) Once a week | 6) A couple of times a day |
| 3) Twice a week | 7) Many times a day |

3. When you have sexual thoughts how strong is your desire to engage in sexual behaviour with a partner?

- | | | | | | | | | |
|-----------|---|---|---|---|---|---|---------------|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No desire | | | | | | | Strong desire | |

4. When you first see an attractive person, how strong is your sexual desire?

- | | | | | | | | | |
|-----------|---|---|---|---|---|---|---------------|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No desire | | | | | | | Strong desire | |

5. When you spend time with an attractive person (for example, at work or school), how strong is your sexual desire?

0	1	2	3	4	5	6	7	8
No desire					Strong desire			

6. When you are in romantic situations (such as a candlelit dinner, a walk on the beach, etc.) how strong is your sexual desire?

0	1	2	3	4	5	6	7	8
No desire					Strong desire			

7. How strong is your desire to engage in sexual activity with a partner?

0	1	2	3	4	5	6	7	8
No desire					Strong desire			

8. How important is it for you to fulfil your sexual desire through activity with a partner?

0	1	2	3	4	5	6	7	8
Not at all important					Extremely important			

9. Compared to other people of your age and sex, how would you rate your desire to behave sexually with a partner?

0	1	2	3	4	5	6	7	8
Much less desire					Much more desire			

10. During this last month, how often would you have liked to behave sexually by yourself (for example, masturbating, touching your genitals, etc.)?

0) Not at all	4) Twice a week
1) Once a month	5) 3 to 4 times a week
2) Once every two weeks	6) Once a day
3) Once a week	7) More than once a day

11. How strong is your desire to engage in sexual behaviour by yourself?

0	1	2	3	4	5	6	7	8
No desire					Strong desire			

12. How important is it for you to fulfill your desires to behave sexually by yourself?

0	1	2	3	4	5	6	7	8
Not at all important					Extremely important			

13. Compared to other people your age and sex, how would you rate your desire to behave sexually by yourself?

0	1	2	3	4	5	6	7	8
Much less desire					Much more desire			

13. How long could you go comfortably without having sexual activity of some kind?

- | | |
|-------------------|----------------------|
| 0) Forever | 5) A week |
| 1) A year or two | 6) A few days |
| 2) Several months | 7) One day |
| 3) A month | 8) Less than one day |
| 4) A few weeks | |

Appendix L**Kansas Marital Satisfaction Scale (KMSS)****Kansas Marital Satisfaction Scale**

Please answer the following questions using this scale:

- 1 = Extremely dissatisfied
- 2 = Very dissatisfied
- 3 = Somewhat dissatisfied
- 4 = Mixed
- 5 = Somewhat satisfied
- 6 = Very satisfied
- 7 = Extremely satisfied

1. How satisfied are you with your marriage?

1 2 3 4 5 6 7

2. How satisfied are you with your wife as a spouse?

1 2 3 4 5 6 7

3. How satisfied are you with your relationship with your wife?

1 2 3 4 5 6 7

Appendix N

Female Sexual Distress Scale - Revised (FSDS-R)

Female Sexual Distress Scale

Below is a list of feelings and problems that women sometimes have concerning their sexuality. Please read each item carefully, and circle the number that best describes how often that problem has bothered you or caused distress **over the last 4 weeks**. Circle only one number for each item, and take care not to skip ANY items.

Answer the questions using this scale:

NEVER	RARELY	OCCASIONALLY	FREQUENTLY	ALWAYS
0	1	2	3	4

How often do you feel:

1.	Distressed about your sex life	0	1	2	3	4
2.	Unhappy about your sexual relationship	0	1	2	3	4
3.	Guilty about sexual difficulties	0	1	2	3	4
4.	Frustrated by your sexual problems	0	1	2	3	4
5.	Stressed about sex	0	1	2	3	4
6.	Inferior because of sexual problems	0	1	2	3	4
7.	Worried about sex	0	1	2	3	4
8.	Sexually inadequate	0	1	2	3	4
9.	Regrets about your sexuality	0	1	2	3	4
10.	Embarrassed about sexual problems	0	1	2	3	4
11.	Dissatisfied with your sex life	0	1	2	3	4
12.	Angry about your sex life	0	1	2	3	4
13.	Bothered by low sexual desire	0	1	2	3	4

Appendix O

Study 2 Demographic Questions

1. Do you live in Australia? If no, then cannot participate in the study
2. What is your age in years? Use a drop down and if younger than 18 cannot participate in the study
3. What is your gender? Male / Female / Other

++If male need to get version that gets male Dx questions. If female gets female Dx questions++

4. Which of the following terms best describes your sexual orientation?
Heterosexual / Homosexual / Bisexual / Other
5. What is your relationship status? Single / Dating / Defacto / Married – if single cannot participate in this study
6. How long have you been in your current relationship? Drop downs for years and months – if less than 6 months can't participate in the study
7. How many children do you have? (Drop down menu from 0 – 8)

++If none need to skip questions about children++

8. What is the age of child 1? Open field

++And so on for how many they have.

9. What is your yearly household income? \$0 – 23 000 / 23 000 – 48 000 / 48 000 – 81 000 / 81 000 – 125 000 / 125 000 +
10. What is your highest completed level of education? Grade 10 / Grade 12 / Trade qualification / Undergraduate Degree / Postgraduate Degree

Appendix P

Original Items for Measure of Sexual and Relationship Distress

Measure of Desire-Related Distress

This questionnaire will help us to better understand the consequences of difficulties you may be having with the sexual part of your relationship. Please rate how true the following statements are for you over the past month. Please note that the word ‘sex’ means any sexual activity with your partner and not just intercourse.

7-point Likert – Not at all true / a little true / somewhat true / neither (OR UNSURE) / mostly true / almost completely true / completely true – scored 0-6

1. I do not initiate sex with my partner anymore
2. I rarely bother to approach my partner for sex
3. My partner does not initiate sex as much as I would like
4. I avoid situations where my partner might initiate sex
5. I spend less time with my partner so as to avoid sex
6. I do or say things that let my partner know not to initiate sex
7. Our sex is routine or predictable
8. There is not much variety when we have sex
9. I am bothered by my masturbation or pornography use
10. I am bothered by my partner's masturbation or pornography use
11. It bothers me that we have sex when one of us is not interested
12. Sometimes I have sex even though I do not have any interest
13. It bothers me that we do not initiate sex equally
14. I try to work out if my partner is interested before I will initiate sex
15. My partner tries to work out if I am interested before they will initiate sex
16. We are cautious about initiating sex with each other
17. We are not as physically affectionate as we used to be
18. We don't hold hands as much as we used to
19. We don't hug and kiss as much as we used to
20. I feel frustrated that I can't fix our sexual problems
21. Nothing I do seems to fix our sexual problems
22. I wish more effort was made to fix our sexual problems
23. I am worried that our relationship might end
24. I am questioning the strength of our relationship
25. I am worried that our sexual relationship will never improve
26. I feel like there is no end in sight with our sexual problems

27. I feel like a failure as a partner
28. I have lower confidence because of our sexual problems
29. I have lower self-esteem because of our sexual problems
30. I feel worthless as a partner
31. I feel undesirable to my partner
32. I feel unattractive to my partner
33. I feel sexually inadequate
34. I do not feel normal when I compare myself sexually to others
35. I worry there is something wrong with me sexually
36. I am worried that my partner has been unfaithful
37. I am worried that my partner will be unfaithful
38. I worry that I may be unfaithful
39. My partner and I do not talk about sex
40. I avoid talking about sex with my partner
41. There is more conflict in my relationship than I would like
42. My partner and I regularly argue
43. My partner and I get annoyed with each other over little things
44. I have difficulty explaining my thoughts and feelings about sex
45. My partner does not understand my thoughts and feelings about sex
46. My relationship is less intimate than I would like
47. My partner and I are less connected than I would like
48. My partner and I are distant with each other
49. My relationship has become more like a friendship
50. My partner and I feel more like flat mates or colleagues
51. There is tension between me and my partner
52. I shut down to protect myself from feeling hurt
53. I find myself withdrawing from my relationship
54. My partner feels withdrawn from our relationship
55. When I think about our sexual relationship I feel guilty
56. I feel guilty because I can not sexually satisfy my partner
57. I feel guilty for hurting my partner's feelings
58. I feel guilty for letting my partner down
59. There is more anger in my relationship than I would like
60. My partner and I get angry with each other
61. I feel frustrated about my level of sexual desire
62. I feel irritation towards my partner
63. My partner is frustrated with me
64. I feel sexually frustrated
65. My partner rejects me sexually
66. I sometimes have to reject my partner when they initiate sex
67. When I think about our sexual relationship I feel sad
68. I worry about sex even when I am not with my partner
69. I feel anxious when I think about our sexual relationship
70. I feel nervous in situations where one of us might initiate sex
71. I am stressed about sex
72. Sex is less enjoyable than it used to be
73. Sex feels like a chore to me

Appendix Q

Couples Satisfaction Index (CSI-16)

Couples Satisfaction Index (CSI-16)

1. Please indicate the degree of happiness, all things considered, of your relationship.

Extremely Unhappy 0	Fairly Unhappy 1	A Little Unhappy 2	Happy 3	Very Happy 4	Extremely Happy 5	Perfect 6
---------------------------	------------------------	--------------------------	------------	--------------------	-------------------------	--------------

	All the time 5	Most of the time 4	More often than not 3	Occasionally 2	Rarely 1	Never 0
5. In general, how often do you think that things between you and your partner are going well?						

	Not at all true 0	A little true 1	Somewhat true 2	Mostly true 3	Almost completely true 4	Completely true 5
9. Our relationship is strong						
11. My relationship with my partner makes me happy						
12. I have a warm and comfortable relationship with my partner						
17. I really feel like part of a team with my partner						

	Not at all	A little	Somewhat	Mostly	Almost Completely	Completely
19. How rewarding is your relationship with your partner?	0	1	2	3	4	5
20. How well does your partner meet your needs?	0	1	2	3	4	5
21. To what extent has your relationship met your original expectations?	0	1	2	3	4	5
22. In general, how satisfied are you with your relationship?	0	1	2	3	4	5

For each of the following items, select the answer that best describes *how you feel about your relationship*. Base your responses on your first impressions and immediate feelings about the item.

26.	INTERESTING	5	4	3	2	1	0	BORING
27.	BAD	0	1	2	3	4	5	GOOD
28.	FULL	5	4	3	2	1	0	EMPTY
30.	STURDY	5	4	3	2	1	0	FRAGILE
31.	DISCOURAGING	0	1	2	3	4	5	HOPEFUL
32.	ENJOYABLE	5	4	3	2	1	0	MISERABLE

Appendix R
Sexual Functioning Questions

The next questions are about your sexual life now.

Asked of everyone

Question: During the last year has there been a period of one month or more when you
lacked interest in having sex? Yes / No

Asked of everyone

Question: Has there been a period of one month or more when you were unable
to orgasm (a climax)? Yes / No

Question: Has there been a period of one month or more when you came to orgasm
(a climax) too quickly? Yes / No

Asked of everyone

Question: Has there been a period of one month or more when you experienced
pain during intercourse? Yes / No

Asked only of men

Question: Has there been a period of one month or more when you had trouble
achieving an erection when you wanted to? Yes / No

Asked only of women

Question: Has there been a period of one month or more when you had trouble
experiencing vaginal dryness? Yes / No

Appendix S**Published Copy of Chapter 6 Paper**



Low sexual desire in women: amongst the confusion, could distress hold the key?

Rebecca N. Frost & Caroline L. Donovan

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Low sexual desire in women: amongst the confusion, could distress hold the key?

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With the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5) recently released, there has been important debate as to what constitutes low sexual desire/low sexual interest in women and how best to operationalise this construct. A new set of diagnostic criteria has been included for women who present with concerns relating to their level of desire. However, inherent to the diagnosis of “abnormal” or low level of sexual desire or interest, is the notion that there is a “normal” or average level of desire. Given that low desire is present in as many as 55% of women, it is possible that variations in desire levels may be a normative response to life circumstances. Increasing desire level has traditionally been the focus of therapy when individuals and couples experiencing desire problems present for treatment. However, this goal has proven difficult to achieve. Recent research investigating the distress associated with low desire, rather than low desire itself, may encourage a new line of potential treatment targets to address distress, as well as improve relationship quality. This paper will highlight the gaps in our understanding of this construct, outlining the seminal research conducted within the field, and offering support for new directions of enquiry.

Keywords: sexual desire; sexual dysfunction; sexual distress; sexual disorder; HSDD; FSIAD

Women’s sexual desire: what is normal?

Low sexual desire is an extremely prevalent experience for women and a common reason for individuals and couples to present for therapy. This paper will highlight the gaps in our understanding of this construct, outlining the seminal research conducted within the field, and offering support for new directions of enquiry. It is not intended to be a systematic review of the literature; for a more comprehensive review, please read Meana (2010). Rather, it is intended to provide an overview of the current literature on desire-related distress and suggest future research targets. Our limited understanding of sexual desire, together with the consequences of low desire, has culminated in desire disorders becoming known as notoriously difficult to treat. A greater focus on relationship factors, as well as minimising the distressing consequences of low desire, may lead to improved outcomes.

Our research into and understanding of sexual desire becomes even more limited when describing the experiences of those who identify as other than heterosexual and cis-gender. Due to this historical absence of alternate voices, throughout this manuscript the focus will remain on heterosexual women who have formed the focus of past research. However, where original articles have used the term “female”, this have been maintained

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so as not to alter the meaning of the original authors. It is also important to note that the majority of studies cited within this manuscript have been conducted within a western context, and as such the limitations of this must be taken into consideration.

What is sexual desire?

Sexual desire, while a seemingly simple construct, has proven very difficult to define. Put most simply, desire is considered a psychological state of wanting or needing; to have an object, to be feeling a certain way, or to be doing a certain thing that will sate the current appetite (Regan & Berscheid, 1999). Despite this apparently straight-forward explanation, sexual desire has been described as a multi-faceted and confusing combination of biological, emotional, cognitive, social, affective, motivational, and other unknown factors (Baumeister, 2001; Beck, 1995). Unfortunately, and somewhat surprisingly, there has been little research conducted on the actual construct of sexual desire. Instead, investigations focusing on the treatment of desire disorders have accelerated without a solid underpinning body of knowledge about the construct of sexual desire itself.

Changes to the DSM criteria

The first port of call for clinicians when describing and defining sexual desire disorders is to turn to diagnostic manuals. With the advent of Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013), the criteria for Female Sexual Interest/Arousal Disorder (FSIAD; Figure 1) has changed dramatically from DSM-IV to Hypoactive Sexual Desire Disorder (HSDD; Figure 2). The changes from DSM-IV criteria were the result of criticisms, including those aimed at their utility. For instance, the lack of a specified time frame for symptoms did not allow the clinician to distinguish between a sexual disorder and a temporary sexual problem (Beutel, Stöbel-Richter, & Brähler, 2008). Furthermore, the mono symptomatic criterion A required clinicians to judge whether the deficiency or absence of desire was sufficient to diagnose the disorder within the context of that individual's life circumstances. Yet, there is a dearth of information available about the distinctions between normal, healthy levels of desire and levels that constitute dysfunction (Brotto, 2009; Heiman, 2002a). As a result of these criticisms, there have been major changes in the description and criteria of sexual disorders within DSM-5. The diagnostic criteria for FSIAD now combine desire and arousal within one diagnostic category, reflecting the difficulties that exist in differentiating the two constructs. The word "interest" rather than "desire" is used, reflecting the multiple reasons women instigate or accept sexual activity that may occur outside of sexual desire in the sense that it was originally understood (i.e., as an appetite for sexual activity per se). The inclusion of a "lack of receptivity" indicator is important and means that it is no longer necessary to diagnose women with healthy levels of responsive desire, and it is possible to differentiate between women who have healthy responsive desire, and those with a complete absence of desire (Brotto, 2009). The new criteria also specify a duration of six months, includes multiple symptoms, and importantly, highlights that the individual must be experiencing distress as a result of their low sexual desire.

Prevalence

Despite poor conceptualisation around the construct of sexual desire problems, it would seem that low desire is an extremely common experience, being present in up to 55% of females (Richters, Grulich, Visser, Smith, & Rissel, 2003; Shifren, Monz, Russo, Segreti,

Female Sexual Interest / Arousal Disorder

A. Lack of, or significantly reduced, sexual interest/arousal, as manifested by at least three of the following:

- 1) Absent/reduced interest in sexual activity.
- 2) Absent/reduced sexual/erotic thoughts or fantasies.
- 3) No/reduced initiation of sexual activity, and typically unreceptive to a partner's attempts to initiate.
- 4) Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (approximately 75% - 100%) sexual encounters (in identified situational contexts or, if generalised, in all contexts).
- 5) Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (e.g. written, verbal, visual).
- 6) Absent/reduced genital or nongenital sensations during sexual activity in almost all or all (approximately 75% - 100%) sexual encounters (in identified situational contexts or, if generalised, in all contexts).

B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.

C. The symptoms in Criterion A cause clinically significant distress in the individual.

D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress (e.g. Partner violence) or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition.

Specify whether:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual function.

Specify whether:

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

Specify current severity:

Mild: Evidence of mild distress over the symptoms in Criterion A.

Moderate: Evidence of moderate distress over the symptoms in Criterion A.

Severe: Evidence of severe or extreme distress over the symptoms in Criterion A.

Figure 1. DSM-5 diagnostic criteria for Female Sexual Interest/Arousal Disorder.

& Johannes, 2008). Lifetime prevalence rates have not been reported to date, nor has there been longitudinal studies investigating fluctuations in women's sexual desire over time. However, of the few studies that do exist, the reported prevalence rates vary greatly due to disagreement on the definition of desire, and differences in its measurement. For instance, few studies have taken note of the distinction between desire dysfunction (the presence of low desire with or without any associated distress) and desire disorders (the presence of low desire with associated distress).

<u>Hypoactive Sexual Desire Disorder</u>	
A.	Persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age and the context of the person's life.
B.	The disturbance causes marked distress or interpersonal difficulty.
C.	The sexual dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Figure 2. DSM-IV diagnostic criteria for Hypoactive Sexual Desire Disorder.

One study that investigated the prevalence rates of both sexual dysfunction and disorders (not desire-specific) was the Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking (PRESIDE) study (Shifren et al., 2008). PRESIDE was a large population-based survey of adult females in the United States ($N = 31,581$) in which women were asked about the presence or absence of common sexual problems. Distress about sexual concerns was measured using the Female Sexual Distress Scale (FSDS; DeRogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). Although 44.2% of females endorsed the presence of a sexual problem (similar to previous studies), only 22.8% reported personal distress. Even more interesting, was that the prevalence of females with sexual problems and sexually related distress was only 12%. It should be noted that 10.8% of females reported sexually related distress without any sexual problems. This indicates that it is almost as common for females to be sexually distressed in the absence of any reported sexual problems as it is for them to be sexually distressed in the presence of sexual problems. Similarly, Hayes, Dennerstein, Bennett, and Fairley (2008) found that 48% of females experienced low desire, but only 16% experienced both low desire and sexual distress. Most recently, Hendrickx, Gijs, and Enzlin (2013) supported these results within their sample of 17,535 females. It was found that 19.3% of females experienced hypoactive sexual desire at a level above the clinical cut-off, yet only 10.3% reported concurrent distress. Interestingly, these results appear to also be true within the adolescent population, with approximately half of those who report a sexual dysfunction experiencing distress (O'Sullivan, Brotto, Byers, Majerovich, & Wuest, 2014). The fact that such high proportions of women experience low desire, yet are not distressed as a result of it, warrants further investigation. In fact, it is possible that low sexual desire in and of itself, may not be nearly as problematic as the literature suggests.

According to the studies described above, between 12% and 16% of women experience a desire disorder, and up to 55% experience low sexual desire. Given that as few as a quarter of women with low sexual desire experience distress, and that most disorders within the DSM are found in a far smaller percentage of the population, how do we justify calling this very common experience (in up to half of all women) abnormal? Even depression (one of the most common psychiatric disorders) has a 12-month prevalence of only 6.6% (Kessler et al., 2005). It would seem therefore, that desire disorders are either highly prevalent (apparently 12%–16% of women), or they are over-diagnosed.

Aetiology of low desire

Despite the apparent high prevalence, the aetiology of low sexual desire is poorly understood and infrequently investigated. Across the limited research examining factors related to low desire, increasing age has been studied most (Hayes et al., 2008), with results generally indicating an inverse linear relationship between age and desire levels. In the Sex in Australia study, women aged 16–19 years were significantly less likely than older women to lack interest in sex ($p = .003$), and women in the 30–39 year age bracket were found to be 20 times more likely than younger women to report sexual dysfunction in general (Richters et al., 2003).

Despite not always reaching statistical significance, a definite pattern of decreasing desire with increasing age in women has been demonstrated across multiple studies (Beutel et al., 2008; Laumann et al., 2005; Laumann, Paik, & Rosen, 1999; McCabe & Goldhammer, 2012; Moreira et al., 2005; Schiavi, Schreiner-Engel, Mandeli, Schanzer, & Cohen, 1990). Interestingly, despite the increasing prevalence of low desire as women age, their level of distress associated with low desire paradoxically decreases, suggesting that the prevalence of women able to be diagnosed with a desire disorder (requiring both low desire and distress) remains relatively stable across the lifespan (Dennerstein, Koochaki, Barton, & Graziottin, 2006; Graziottin, 2007; Laumann et al., 1999).

As might be expected, increasing relationship length is also related to lower sexual desire (Hayes et al., 2008; Murray & Milhausen, 2011), as are other couple-based variables, including low relationship satisfaction (Brezsnyak & Whisman, 2004; Goldhammer & McCabe, 2011; Hayes et al., 2008; Witting et al., 2008), and low sexual satisfaction with their partner (Dennerstein et al., 2006; Hayes et al., 2008; Laumann et al., 1999). The way that a woman thinks about her relationship can also affect her sexual desire, with low expectations about the future of the relationship being associated with less interest in sex (Laumann et al., 2005).

In addition to age and relationship variables, there are also numerous individual factors predictive of low sexual desire. For instance, low sexual desire has been associated with anxiety and depressive symptoms (Hartmann, Heiser, Rüffer-Hesse, & Kloth, 2002; Laumann et al., 2005; Moreira et al., 2005; Shifren et al., 2008), negativity about body image (Richters et al., 2003), low self-esteem, menstrual cycle stage, pregnancy, and use of the contraceptive pill (Goldhammer & McCabe, 2011; Hartmann et al., 2002; Regan, Lyle, Otto, & Joshi, 2003; Witting et al., 2008). Other individual physical correlates of low desire include having ever contracted a sexually transmitted disease, and having general poor health (Laumann et al., 2005; Laumann et al., 1999), as well as specific health concerns such as thyroid problems, urinary incontinence, being postmenopausal, or having experienced surgically induced menopause (Dennerstein et al., 2006; McCabe & Goldhammer, 2012; Shifren et al., 2008). Furthermore, lifestyle factors such as fatigue, stress, and having children have all been found to be correlates of low sexual desire (Goldhammer & McCabe, 2011; Laumann et al., 1999), and the more children a woman has, the lower her sexual desire has been found to be (Witting et al., 2008).

Despite extant research on the correlates of sexual desire problems, the mechanisms through which these factors relate to women's desire-related behaviour is poorly understood, due to both a lack of empirical investigation and conflicting results in the studies that have been conducted to date. That said, there is consensus in the literature that, when women feel sexual desire, it does not necessarily lead to behavioural expression of that desire and subsequent sexual activity (as is more commonly understood to occur in men). For example, Goldhammer and McCabe (2011) interviewed 40 partnered, heterosexual

women and found that sexual desire could be pleasurable in and of itself, and that the initiation of sexual contact was not necessarily required when sexual desire was experienced. Also of note is that women describe a variety of reasons for engaging in sexual activity, few of which involve what might be classically described as due to desire. For instance, it has been found that women sexually engage for reasons ranging from the sexual (e.g. pleasure, reproduction, and relief of sexual tension) through to the emotional (e.g. expression of closeness and pleasing one's partner) (Leigh, 1989; Meston & Buss, 2007). In fact, women have been found to more often engage in sexual activity for emotional reasons, with the most important aspect of sexual behaviour reported to be that of feeling loved or needed (Carroll, Volk, & Hyde, 1985).

One line of thought is that low desire may actually be adaptive. From an evolutionary perspective, it may not make sense for an individual to attempt to procreate while unwell, under chronic stress, after having recently had another child, being unable to provide for a new child, or being within an unstable relationship. Furthermore, the far from exhaustive list of factors contributing to reduced desire described above are all commonly occurring experiences within a woman's life. For instance, it is possible that reduction in sexual desire is normal as women age, as they are less likely to require sexual activity for partner bonding and procreation. Given that many of the factors that predict low sexual desire are frequently experienced life events, it is possible that low desire may in fact be a normal response to these stressors.

Consistent with the idea that women are more likely to engage in sexual activity for emotional reasons and that reduced sexual desire may be an adaptive and/or normal response to life stage, life events and relationship issues, Basson's (2002) circular model of the female sexual response (Figure 3) emphasises women's motivations for sex, and is more intimacy- and emotion-based than previously proffered. The model suggests that women may normally have a more "responsive" than spontaneous style of sexual desire, with desire emerging in response to sexual arousal, and subsequently requiring the woman to be willing to sometimes engage in sexual activity before she is aware of desire. The sexual satisfaction and non-sexual rewards (such as emotional intimacy), that occur as the result of responsiveness, are reinforcing and may facilitate the recurrence of responsiveness (Meana, 2010). While this model is yet to face empirical scrutiny, it has garnered support

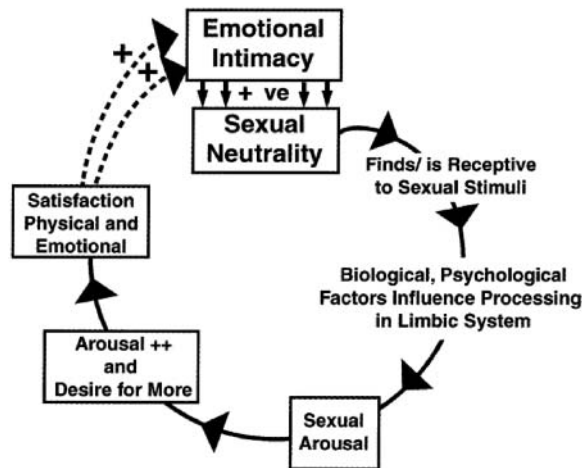


Figure 3. Circular model of the female sexual response, by Basson (2002). This material is reproduced with permissions of John Wiley and Sons, Inc.

within the field and suggests that individual, couple, and environmental factors must be conducive for the cycle to proceed further. Certainly, in light of the many examined causes of low desire and the potential explanations of their impact, it seems that sexual desire in women is a highly complex and individual experience. A loss of, or reduction in, sexual desire appears to be a very common reaction to a large range of normative life events and phases, as well as a logical outcome to interrupted arousal and/or unrewarding sexual outcomes.

What is normal desire?

Given that a myriad of factors have been investigated with respect to low sexual desire, what do we know about normal or healthy desire? Unfortunately, the answer is precious little. When patients present for treatment concerned with their level of desire, how do we know whether or not their condition is abnormal? Diagnosis assumes extensive knowledge on behalf of the clinician regarding both normative and problematic levels of desire across the lifespan, within the context of a multitude of life and health events. Even for the most experienced clinicians, judgement is reliant on the time spent with individuals and couples previously presenting for treatment. Such patients represent an inherently skewed sample and judgements based on their experiences are not at all objective. In the absence of a body of knowledge around normal and problematic levels of sexual desire, researchers and clinicians have been forced to treat patients and research participants guided only by personal experience, consultation with other experienced therapists, and a few initial treatment studies.

Treatment for desire disorders

Women with low desire present for treatment either alone or with their partner, in the hope that their desire can somehow be reinstated to earlier levels, or can be increased to an intensity that they assume would be similar to other women. Increasing desire has therefore been the focus of the few treatment studies conducted to date. For most DSM-5 disorders, there is often a significant associated body of empirical and theoretical literature, leading to consensus around the formulation of a disorder and the subsequent evidence-based treatment of it. When it comes to disordered desire or disordered sexual interest and arousal however, the patient and clinician have few such guides.

There has been little controlled research investigating the treatment of desire disorders, and subsequently there are very few empirically validated treatments available (Heiman, 2002b). Furthermore, sexual desire has been considered notoriously difficult to treat by clinicians from many backgrounds, including psychology, psychiatry, and gynaecology (Basson, 2002). The paucity of effective treatments for desire disorders is perhaps not surprising given the lack of knowledge about the construct of low desire and whether it is in fact normative or problematic in the first instance (Goldmeier, 2001; Meana, 2010).

There are currently no clinically effective medications available for desire disorders. Of the multiple pharmacological studies conducted, the most investigated medication has been Flibanserin, that acts as a 5-HT_{1A} receptor agonist and 5-HT_{2A} receptor antagonist (Stahl, Sommer, & Allers, 2011). Despite the emphasis placed on finding a medical solution to low sexual desire, Flibanserin has so far been found to have a positive impact in only a small number of trial participants and where scores were published, the improvement from pre to post was minimal. For instance, in the SUNFLOWER study (Jayne

et al., 2012), an extended trial, total scores on the FSDS-R reduced from 24.5 at week 4 to 19.9 at week 52, still well above the clinical cut-off of ≥ 15 that is applied to this measure (DeRogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008). At this stage, medical management of low sexual desire is still unavailable.

Psychological treatment has had more success, with cognitive behavioural therapy (CBT) has shown small positive effects when compared with a control group, that have been maintained at six-month follow-up (Hurlbert, White, Powell, & Apt, 1993). For instance, Trudel et al. (2001) demonstrated that a 12-week CBT group treatment for heterosexual couples in which the woman experienced HSDD was more effective than a wait-list control group, although only 28% of women in the treatment group felt that they were symptom free following treatment. In individual treatment, the recent work of Brotto and Basson (2014) has been most promising. They conducted a controlled trial of group mindfulness-based cognitive sex therapy with excellent results. After four sessions, the treatment group experienced increased scores on a measure of sexual desire ($d = 0.97$). Interestingly, both the treatment group and wait-list control group experienced a reduction in distress at a similar rate, indicating that the active mechanism with respect to reduced distress was not the treatment itself.

Although under researched, there is some evidence to suggest that taking a couples approach to the treatment of desire disorders is beneficial. Hurlbert et al.'s study mentioned above allocated their sample into women's only (WO) and couples only (CO) groups, finding that the CO group reported more improvement than the WO group, with significantly higher sexual desire and sexual satisfaction being reported at six-month follow-up (1993). Emotion Focused Therapy (EFT) with couples has also shown significant pre-, post- and follow-up treatment gains for women with low desire, despite the intervention not specifically targeting desire problems (Macphee, Johnson, & van Der Veer, 1995). EFT is a couples therapy that works within an attachment framework (Greenberg & Johnson, 1988) and for the purpose of the study, was conducted without any alterations specific to low desire. It was found that post-treatment, 84% of the female participants had either recovered (36%) or improved (48%) on a measure of sexual desire towards their partner. Furthermore, a lessening of depressive symptoms was also found post-treatment, indicating that treatment may have also had a positive effect on desire-related distress.

The few existing treatment studies suggest that, although increasing a woman's desire levels has historically been a difficult task, there are other individual and couple variables, such as personal distress, relationship satisfaction, and emotional symptoms that may be potential treatment targets and may serve to in turn increase sexual desire. Indeed, the results from the EFT study indicate that improving relationship satisfaction may inadvertently increase sexual desire by removing a number of the couple factors known to be associated with low desire. The aforementioned difficulty treating this concern may support the notion that low sexual desire may not, in and of itself, be problematic, but rather may constitute a logical outcome to unfavourable contexts. Without a consistent body of literature and proven effective treatments, perhaps the goal should be to reduce the consequences couples face as a result of low sexual desire. Focusing treatment efforts on those contexts, including relationship difficulties and the distress couples experience as a result, could potentially prove more effective than focusing exclusively on low sexual desire itself.

Desire-related distress

Supporting the importance of relationship factors in the aetiology and treatment of low desire disorders, is the literature around desire-related distress. As previously mentioned,

the presence of clinically significant distress is a requirement for the diagnosis of FSIAD, and is an area of investigation that has recently received empirical interest. As already discussed, it is very common for women to experience low desire without feeling distressed, and it is also possible for women to feel distressed either with or without low desire (Hendrickx et al., 2013; Shifren et al., 2008). A possible explanation for the disparate effects of sexual functioning and distress is that poor sexual function is experienced differently depending on many factors, including prior life and sexual experiences, cognitive attributions, partner reactions, misinformation, and coping styles.

Few factors have been investigated in relation to their impact on desire-related distress. However, as noted above, increasing age has been found to predict decreases in the distress about low sexual desire (Dennerstein et al., 2006; Graziottin, 2007; Laumann et al., 1999). A small number of other variables have also been found to relate to greater distress due to low sexual desire including the use of hormone therapy, history of urinary incontinence, history of anxiety, and depression (Shifren et al., 2008). Indeed, Hayes, Dennerstein, Bennett, and Fairley (2008) found that after controlling for 13 other variables, respondents who reported that they were depressed were the only ones more likely to experience sexual distress (OR = 3.1). Recent research by Burri, Lachance, and Williams (2014) investigated the prevalence and risk factors of sexual problems and distress in women suffering from chronic widespread pain (CWP). Not surprisingly, their results indicated that women with CWP were significantly more likely to experience life-long desire difficulty, as well as sexual distress. Within this study, it was also shown that in normal (non-CWP) women, the strongest predictor of both low sexual desire and distress was the presence of relationship dissatisfaction.

Relationship factors have previously been found to be associated with distress around low desire, although it has largely been ignored in the literature in regard to aetiology and treatment. Having a current partner increases a female's chance of feeling distress about their low desire by 4.63 times (Shifren et al., 2008) and was found to be the strongest independent correlate of distress in the PRESIDE study. These findings were supported in an investigation of sexual function in 230 women in late menopause who reported that being sexually active or having a partner were associated with higher levels of sexual distress (not desire specific) (Lonnée-Hoffmann, Dennerstein, Leher, & Szoek, 2014). When scores on measures of sexual function and sexual distress were combined, it was determined that sexual dysfunction was present for 23% of sexually active women, but only 7% of those who were sexually inactive. Similarly, 21% of women with a partner could be said to have sexual dysfunction, compared to only 4% of those who were unpartnered. Although this research contributes to a preliminary understanding of the factors related to desire-related distress however, very little is understood about the actual distress and consequences experienced by women who have low sexual desire.

Stephenson and Meston (2012) have undertaken the most comprehensive research to date, investigating the consequences and distress caused as a result of female sexual dysfunction. The sample of 75 women over the age of 18 years reported a number of consequences of sexual dysfunction, including decreased pleasure, disruption of sex, decreased sexual frequency, decreased partner pleasure, negative partner self-emotions, partner disappointment/sadness, and partner anger/frustration. Of particular interest, was that the frequency with which a participant reported a consequence as occurring did not necessarily relate to the amount of distress caused by it. For instance, the most frequent consequence was experiencing less physical pleasure during sex, while the least frequent was the partner expressing anger towards the participant during or after sex. In terms of distress associated with these consequences however, the least distressing consequence was

decreased physical pleasure and the most distressing was the partner expressing anger. This suggests that the distress experienced about sexual dysfunction (and possibly low desire specifically) might best be considered within a relationship framework, and that current treatments aimed at increasing desire in the individual may not be targeting the couple factors that may actually be more important.

Summary and conclusion

From the above discussion, it is evident that theoretical and empirical work relating to female sexual desire and distress remains in its infancy. The prevalence of low desire in women is high, although relatively few women with low desire are distressed by it. Research investigating the aetiology of low desire has pointed to increasing age, as well as a number of relationship factors and life events as being influential in the development of low desire.

For those who seek treatment, there has been minimal success in increasing level of sexual desire. There may be a number of reasons however, for why we so often fail in our treatment of this sexual “disorder” of low desire. The high prevalence of the complaint suggests that experiencing low desire at some stage in life is a normative process, just as experiencing transient sadness is normative but depression is not. The idea that we require an alternative to the traditional medicalisation of female sexuality was suggested over a decade ago (Tiefer, 2001; Tiefer, Hall, & Tavis, 2002), with the suggestion that women’s sexual problems may often be normative and result from a number of factors including socio-cultural, political, partner, relationship, and psychological well-being. When the many factors known to impact sexual desire are considered through a normative lens, it can be seen that they are commonly experienced life events (such as aging, parenthood, poor health), for which a reduction in sexual desire may well be adaptive. The majority of women experiencing low desire have not reported feeling distressed as a result, and it appears that when distress is reported, it is commonly within the context of a relationship, a factor that must be taken into consideration in future research. Perhaps for many women, low desire is an adaptive response to stressful life events, but can become problematic due to the difficulties it causes within their relationships.

There are, of course, a percentage of women who have never experienced desire in their lifetime or whose level of desire is consistently low and causes distress even in the absence of life stressors. For those distressed by persistent and unexplained low levels of desire, treatment should of course aim to improve this experience for them. For the remaining women and couples presenting for treatment, however, maybe there is a better way. Is it possible that we are attempting to treat what is actually a normal phase of sexuality occurring in response to a number of factors? Until we know the answer to the many questions still unanswered about sexual desire, it may be more effective to instead focus on improving the sequelae and distress caused by desire problems. Further investigation into the distressing consequences of low desire experienced by both individuals and couples may inform future treatment targets. Furthermore, when considering the circular model of female sexual response put forth by Basson (2002), it is possible that in the process of improving a woman’s emotional symptoms, sexual cognitions, relationship satisfaction, and distress experienced, we may find the key to improving their interest and desire.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Dr Caroline Donovan is a clinical psychologist and has been a lecturer in the School of Applied Psychology at Griffith University since 2008. She specializes in child anxiety disorders with additional interests in adolescent depression and eating issues. Caroline has a particular interest in the development, empirical testing, and dissemination of internet-based therapy and in particular, the BRAVE-ONLINE programs for youth anxiety. Behind her interest in the youth area, is a strong belief in the value of prevention and early intervention. Through preventing and treating psychological disorders in youth, problematic trajectories towards adult mental health issues can be averted.

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Appendix T**Sexual and Relationship Distress Scale (SaRDS)**

Sexual and Relationship Distress Scale (SaRDS)

This questionnaire will help us to better understand the consequences of difficulties you may be having with the sexual part of your relationship. Please rate how true the following statements are for you over the past month. Please note that the word 'sex' means any sexual activity with your partner and not just intercourse.

	0	1	2	3	4	5	6
	Not at all true	A little true	Somewhat true	Neither true or untrue	Mostly true	Almost completely true	Completely true
	0	1	2	3	4	5	6
1 I worry about sex even when I am not with my partner							
2 I feel anxious when I think about our sexual relationship							
3 I am stressed about sex							
4 My partner and I get angry with each other							
5 My partner and I regularly argue							
6 My partner and I get annoyed with each other over little things							
7 I do not initiate sex with my partner anymore							
8 I rarely bother to approach my partner for sex							
9 I feel guilty because I can not sexually satisfy my partner							
10 I feel guilty for letting my partner down							
11 I am worried that my partner has been unfaithful							
12 I am worried that my partner will be unfaithful							
13 I am worried that our relationship might end							
14 I am questioning the strength of our relationship							
15 Our sex is routine or predictable							
16 There is not much variety when we have sex							
17 My partner and I do not talk about sex							
18 I avoid talking about sex with my partner							
19 I feel undesirable to my partner							
20 I feel unattractive to my partner							
21 We don't hug and kiss as much as we used to							
22 We are not as physically affectionate as we used to be							
23 I wish more effort was made to fix our sexual problems							
24 I feel frustrated that I can't fix our sexual problems							
25 I have lower confidence because of our sexual problems							
26 I have lower self-esteem because of our sexual problems							
27 I worry there is something wrong with me sexually							
28 I do not feel normal when I compare myself sexually to others							
29 My relationship has become more like a friendship							
30 My partner and I feel more like flat mates or colleagues							
	Total						

Sexual and Relationship Distress Scale (SaRDS): Psychometric Properties and Scoring

Background

The Sexual and Relationship Distress Scale was designed to assess the distress and consequences experienced by individuals when there are sexual problems within their relationship. It provides information about the types and severity of distressing outcomes resulting from sexual difficulties. This measure can be completed by one or both members of a couple.

Psychometric Properties

Reliability and validity have been examined with a sample of 1192 adults in long-term relationships. Together, the 30 items included in this measure explained 77.5% of the total variance in this sample. Internal reliability is excellent (Cronbach's $\alpha = 0.95$), and appropriate validity has been confirmed alongside the Female Sexual Distress Scale – Revised (FSDS-R; $r = .82$) and the Couples Satisfaction Index (CSI; $r = -.69$). The SaRDS has a Flesch-Kincaid reading level of Grade 3.9.

The subscale names, ranges, reliabilities, means and standard deviations from a community sample are included in the table below.

SaRDS subscale	Items	Range	α	<i>M</i>	<i>SD</i>
1. Anxiety	1,2,3	0-18	.90	5.14	5.84
2. Conflict	4,5,6	0-18	.88	6.31	5.38
3. Initiation	7,8	0-12	.93	4.02	4.18
4. Guilt	9,10	0-12	.70	3.98	3.75
5. Infidelity	11,12	0-12	.87	1.71	2.93
6. Security	13,14	0-12	.91	3.26	4.01
7. Predictability	15,16	0-12	.77	5.86	3.60
8. Communication	17,18	0-12	.78	2.85	3.40
9. Body Image	19,20	0-12	.96	3.98	4.24
10. Physical Affection	21,22	0-12	.87	5.24	4.43
11. Hopelessness	23,24	0-12	.87	5.36	4.28
12. Self-esteem	25,26	0-12	.95	3.46	4.14
13. Normalness	27,28	0-12	.81	3.69	3.91
14. Relationship Quality	29,30	0-12	.90	3.52	4.00
TOTAL SCORE	1-30	0-180	.95	58.37	39.39

Scoring

The SaRDS is scored by adding the item responses in each subscale and combining to create a total score. There are no reversed items and the subscales are presented in order for ease of scoring.

For questions or permission to use this measure please contact
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