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To consult or not to consult? Investigating barriers to dysparenia treatment-seeking in young women

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<http://dx.doi.org/10.34917/2344937>

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TO CONSULT OR NOT TO CONSULT? INVESTIGATING BARRIERS TO
DYSPARENIA TREATMENT-SEEKING IN YOUNG WOMEN

by

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A dissertation submitted in partial fulfillment
of the requirements for the

Degree of Philosophy in Psychology
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May 2011

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THE GRADUATE COLLEGE

We recommend the dissertation prepared under our supervision by

Robyn L. Donaldson

entitled

**To Consult or Not to Consult? Investigating Barriers to Dysparenia
Treatment-seeking in Young Women**

be accepted in partial fulfillment of the requirements for the degree of

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May 2011

ABSTRACT

To Consult or Not To Consult? Investigating Barriers Treatment-Seeking in Young Women

by

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Little is known about mediators of treatment-seeking in dyspareunia. The general health belief literature as well as some existing qualitative data specific to dyspareunia, however, suggests a number of potentially significant barriers that may delay or prevent women from enlisting the aid of health care professionals. The aim of this study was to investigate influences on dyspareunia treatment-seeking behavior in young women, for whom the consequences of treatment avoidance are hypothesized to be the greatest. Given the lack of standardized health behavior measures relevant to intercourse pain, we constructed a measure assessing potential barriers to dyspareunia treatment-seeking. An exploratory principal component analysis yielded a 28-item, 3-component measure entitled the Sexual Health Treatment Barrier Scale – Dyspareunia Version (SHTBS-Dysp). The components (sub-scales) were interpreted and entitled as follows: *Minimization, Shame, and Fear of Severity*. We then investigated the psychometric properties of the SHTBS-Dysp, and explored convergent validity insofar as the endorsement of barriers correlated with cognitive and emotional styles associated with health behavior in the empirical literature and with self-report of treatment-seeking. Contrary to what has been found for most other health problems, treatment-seeking barriers for dyspareunia correlated positively with health anxiety, somatic amplification,

pain catastrophization, and negative affect. Consistent with expectations, the measure correlated negatively with self-report of treatment seeking. Clinical and public health implications of the results are discussed.

ACKNOWLEDGEMENTS

Words alone cannot describe the gratitude I possess for my advisor, Dr. Marta Meana. A considerable amount of our work was conducted while she had been on sabbatical and I am eternally grateful for the time and attention she provided. Without Dr. Meana's constant encouragement, guidance and support throughout graduate school, I would not have been as successful on this journey. I remain in awe of her accomplishments, diligence, talents and person and consider it an honor to have worked with her and to have known her.

I would like to thank my dissertation committee members: Dr. Donohue, Dr. Kern, Dr. Peterson, and Dr. Weeks. I appreciate the time and effort they provided in reviewing my research and in offering suggestions for improvement. I would also like to especially thank Dr. Kern for participating while technically in retirement. Thank you.

I would also like to thank my research assistant, Kristina. She provided much-needed assistance during a crucial time and exhibited much enthusiasm about the research and topic.

And, last but hardly least, I would like thank my fiancé and my family who have witnessed the overall process of graduate school and the production of this dissertation. I greatly appreciate the sacrifices they have made to help make this happen.

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CHAPTER 1

INTRODUCTION

Dyspareunia is a sexual pain disorder marked by recurrent pain with sexual intercourse that causes distress or interpersonal difficulty (APA, 2000). A significant number of women suffer from this disorder, which has a prevalence rate of approximately 14% (Laumann, Paik, & Rosen, 1999). Dyspareunia is associated with a wide range of negative consequences. Pain with intercourse can impair all areas of sexual functioning, including desire, arousal, orgasm and overall satisfaction. The experience of pain with sex can also lead to numerous psychological sequelae ranging from negative affect and emotional lability to self-confidence and self-esteem deficits (e.g., Donaldson & Meana, 2011; Meana & Binik, 1994). Relationships are another area negatively affected, with existing data supporting a link between sexual pain and lower rates of marital adjustment (e.g., Meana, Binik, Khalife, & Cohen, 1997). One study even found support for the existence of depression in partners of women with dyspareunia and theorized it to be linked to the sexual difficulties incurred by the experience of pain (Nylanderlundqvist & Bergdahl, 2003). The accumulation over time of the deleterious hypothesized effects of dyspareunia is of clinical concern as they impact various dimensions of the quality of life and well-being of women and their partners. Young women (18-29) are of particular concern as they have the highest prevalence rate (22%; Laumann, et al., 1999) and the pain has the potential to seriously disrupt their nascent sexual and romantic lives well before relationship and self-concept stability has set in.

Seeking treatment is crucial to the prevention or management of the potential physical and psychological damage that can accumulate over time as a direct complication of

dyspareunia, especially for young women. However, the little data that exists indicates that they are delaying treatment-seeking for their pain. In a qualitative study addressing the psychosocial experience of pain with intercourse, participants reported a number of barriers interfering with their enlisting the help of health care professionals (Donaldson & Meana, 2011). Our understanding of the reasons underlying this reticence to consult with medical doctors or psychologists is not very elaborated in the case of dyspareunia. There is, however, theoretical reason to hypothesize that treatment seeking in women with dyspareunia may be influenced by factors similar to those involved in the practice of other health behaviors.

The Health Belief Model (HBM: Champion, 1993; Rosenstock, 1966) and the empirical literature on determinants of health behavior suggest the influence of a number of factors. Of particular salience are the specific HBM dimensions of *Seriousness*, *Susceptibility*, *Benefits*, and *Barriers*, as well as a number of cognitive and emotional styles associated with treatment seeking in other conditions; health anxiety, negative affect, hypervigilance and somatic amplification, and pain catastrophization (Goubert, Francken, Crombez, Vansteenwegen, & Lysens, 2002; Jackson, Fiddler, Kapur, Wells, Tomenson, & Creed, 2006; Villanueva-Torrecillas, 2004; Walker & Furer, 2006). Considering that various samples of women with dyspareunia have been found to be characterized by elevated levels of depression and psychological distress, anxiety, hypervigilance, and somatic preoccupation, these factors may be of particular importance in the investigation of the influences on treatment seeking (Bohm-Starke, Hilligies, Brodda-Jansen, Rylander, & Torebjork, 2001; Jantos & White, 1997; Meana, et al., 1997;

Meana, Binik, Khalife, & Cohen, 1998; Meana & Lykins, 2009; Pukall, Binik, Khalife, Amsel, & Abbott, 2002; van Lankveld, Weigenborg, & Ter Kuile, 1996).

On the other hand, dyspareunia is unlike most health problems in its direct link to sexual activity. This makes it likely that certain mediators of health utilization will be unique and pertain specifically to the sexual nature of the problem, with all of its attendant socio-cultural weight. There is a body of research that has documented the reticence that both patients and doctors have to address sexual problems within the context of a medical consultation (e.g., Sadovsky, Alam, Encilla, Consequien, Tipu, & Etheridge-Otey, 2006; Wiggins, Wood, Granai, & Dizon, 2007). For this reason, it is also important to extend our theorizing beyond the regulation of other health behaviors. Treatment seeking for dyspareunia may share characteristics of treatment-seeking for other potential health problems, but it may also present a specific and unique case because of its sexual and relational context.

We are interested in expanding our knowledge of the influences on treatment in dyspareunia in young women in the belief that this question is a clinically important one. Treatment can significantly improve the lives of women reporting pain with intercourse and it behooves us to understand and target potential barriers. We thus aim to follow-up our initial qualitative investigation of treatment barriers (Donaldson & Meana, 2011) with a quantitative investigation of unique treatment-seeking influences, as well as those shared with other health problems. After a brief review of the problem of dyspareunia, its etiology and psychosocial correlates, the particular dilemma it poses for young women, and the question of treatment seeking for this problem, we will review the general literatures on treatment-seeking in general and on the health beliefs and

cognitive/emotional styles associated with dyspareunia. We will then turn to a review of data regarding both patient and physician reticence to address sexual problems in regular medical consultations. Finally, we will present the aims of the study and the methodology.

CHAPTER 2

LITERATURE REVIEW

The Problem of Dyspareunia

One of two sexual pain disorders in the Diagnostic and Statistical Manual of Mental Disorders-IV-TR (APA, 2000), dyspareunia refers to the experience of recurrent pain with sexual intercourse causing distress or interpersonal difficulty and not produced by the physiological effects of a substance or a medical condition. Symptoms of dyspareunia are classified as being lifelong or acquired, generalized or situational, and due to psychological or combined factors. In the last decade, dyspareunia has come to be considered a significant women's health problem largely because of its high prevalence and because of the serious psychosocial detriments associated with it.

Prevalence figures have ranged from 3% to 23%, with most studies settling somewhere around 15% (Danielsson, Sjoberg, Stenlund & Wikman, 2003; Fugl-Meyer & Fugl-Meyer, 1999; Najman, Dunne, Boyle, Cook, & Purdie, 2003). In the most epidemiologically sound survey of sexual behavior to date, Laumann, et al. (1999) interviewed 1410 men and 1749 women aged 18 to 59 and found approximately 14% of women suffered from dyspareunia. Younger women, aged 18 to 29, had the highest prevalence rate at 22% with prevalence decreasing with age: 30 to 39, 15%; 40 to 49, 13% and 50 to 59, 8%. In this survey, Caucasians reported the highest rate (16%) followed by Hispanics (14%) and then African Americans (13%). What is evident from the literature is that dyspareunia is a disorder that affects a considerable number of women across age, ethnicity and geographic location.

Etiology and Correlates of Sexual Pain

The etiology of dyspareunia is considered to be heterogeneous with overlapping physiological and psychosocial correlates. Without the benefit of longitudinal studies, it is difficult to tease apart causal factors from perpetuating ones, as factors that gave rise to the pain may no longer be the ones that maintain it. At this point in the research on dyspareunia, we are left to infer causal mechanisms from a collection of correlates of sexual pain. However, even when we refrain from making causal links, it is clear that there are a number of physiological, psychological, sexual and relational correlates of dyspareunia.

Physiological.

Most research efforts on potential physiological etiologies of dyspareunia have focused on the most common type of dyspareunia, provoked vestibulodynia (PVD) (formerly known as vulvar vestibulitis) (Moyal-Barraco & Lynch, 2004). Hypothesized etiologic factors have included neurological dysfunctions or hypersensitivity, endocrine or hormonal imbalance, vascular inflammation, pelvic floor hypertonicity, and a variety of infections such as yeast, sexually transmitted, and urinary tract (Bohm-Starke, et al., 2001; Brotto, Basson, & Gehring, 2003; Danielsson, Sjoberg, & Wikman, 2000; Denbow & Byrne, 1998; Lowenstein, et al., 2004; Pukall, Binik, & Khalife, 2004; Pukall, et al., 2002; Salonia, et al., 2004; Umpierre, Kaufman, Adam, Woods, & Adler-Storthz, 1991; White & Jantos, 1998; Witkin, Gerber & Ledger, 2002). Other medical conditions such as endometriosis or benign cysts have also been hypothesized to play a role in the development of certain cases of dyspareunia (Canavan & Heckman, 2000; Graziottin, 2003). Iatrogenic causes linked to episiotomies, radiotherapy for cervical cancer, and

pelvic surgery scarring have also been implicated (Canavan & Heckman, 2000). It is important to note, however, that no one etiology accounts for a significant number of dyspareunia cases. Actually, in the majority of cases of dyspareunia, it has been impossible to determine a specific physiological etiology, much as in the case of other pain disorders of unknown etiology such as migraines, lower back pain, and fibromyalgia (Binik, Bergeron, & Khalife, 2007).

Psychological.

In addition to the myriad potential physiological etiologies, psychosocial correlates of dyspareunia have also received research attention. Lazarus (1980) organized these into three main psychosocial dimensions: developmental (e.g., early sexual attitudes, upbringing, and sexual schema), trauma-related (e.g., sexual abuse, genital medical procedures) and individual psychological factors (depression, somatization, attribution styles, state and trait anxiety, pain hypervigilance, psychological distress, and phobia).

Women with PVD and other sub-types of dyspareunia have been found to have elevated levels of depression, psychological distress (anxiety, psychoticism, paranoid ideation, OCD, hostility, interpersonal sensitivity, phobic anxiety), and sexual depression (feelings of depression regarding one's sex life) than controls (Gates & Galasky, 2001; Meana, et al., 1997; Meana, et al., 1998). Nylanderlundqvist and Bergdahl (2003) found similar results in regards to depression and anxiety using the Beck Depression Inventory (BDI) and the State-Trait Anxiety Inventory (STAI-S) when comparing women with dyspareunia and controls. Over half (58.6%) of the women with dyspareunia scored a 10 or above on the BDI, indicating a potential diagnosis of mild to severe depression. In addition, Jantos and White (1997) found that a large percentage of women with

dyspareunia scored high on suicidal ideation (57%) and depression (60%). Depressive symptomatology has also been associated with more severe pain reports (Meana, et al., 1998).

Some women with dyspareunia have also been found to experience anxiety (Jantos & White, 1997) or even sexual phobia (Marin, King, Dennerstein, & Sfameni, 1998). Nunns and Mandal (1997) found their sample of women with dyspareunia had higher state and trait anxiety scores than controls. In one study, participants with PVD reported experiencing phobic anxiety to vaginal touch or entry (Brotto, et al., 2003). Women with PVD have also been found to score higher in the dimension of harm avoidance (a tendency to react with pessimistic worry and increased anxiety to future problems), to be passively avoidant, fearful, shy with strangers, and to have rapid fatigability (Danielsson, Eiseemann, Sjoberg, & Wikman, 2001). It has been hypothesized that anxiety and stress may magnify the symptoms of dyspareunia (Marin, et al., 1998).

Sexual.

Dyspareunia is also highly comorbid with other sexual problems, namely deficits in desire, arousal, and orgasmic capacity (Graziottin, Caliari, & Nicolosi, 2001). Women with dyspareunia have a higher incidence of engaging in sexual intercourse with reportedly low levels of lubrication, arousal, and desire, all of which can produce and or exacerbate the experience of pain during intercourse (Marin, et al., 1998; Nunns, & Mandal, 1997). Wounda, Hartman, Bakker, Bakker, van de Wiel, and Schultz (1998) found low physiological arousal and Marin, et al. (1998) found a lack of subjective arousal in women with dyspareunia. Payne, Binik, Amsel, and Khalife (2005) considered

the pain to act as a distraction from sexual cues, thus explaining the decrease in arousal for women with PVD.

It is possible that the arousal and desire problems of many women with dyspareunia are linked exclusively to fear of penetration rather than to pre-existing sexual aversion that gave rise to dyspareunia. In other words, the generalized sexual dysfunction may be a consequence rather than a cause of intercourse pain. Marin, et al., (1998) measured the arousal of women with dyspareunia and controls when exposed to erotic scenes and found that women with dyspareunia experienced as much physical and subjective arousal to the visual stimuli as did control women. However, when viewing coitus scenes specifically, women with dyspareunia experienced a decrease in vaginal vasocongestion, although they subjectively found the coitus scenes arousing. Brauer, ter Kuile, Janssen and Laan (2007) found a reduction in subjective and genital sexual responding when they induced pain-related fear in women with and without dyspareunia; however, women with dyspareunia reported significantly more negative affect than the control group. Although women with dyspareunia are capable of engaging in many forms of painless, non-penetrative sexual expression and foreplay, many avoid all types of sexual activity. They may be generalizing the pain to all forms of sexual activity or it could be that all non-penetrative sexual activity carries the risk of future penetration (Gates & Galasky, 2001). Solitary masturbation may be the exception, as women with dyspareunia have reported less frequent problems and distress with masturbation than with sexual interaction (van Lankveld, et al., 1996). It is also possible that negative thoughts regarding sex are related to this lack of sexual interaction, since some women with dyspareunia report more negative cognitions about or aversion to sex (Nunns & Mandal, 1997). It is important to

note, however, that one other study did not find that women with dyspareunia had more negative cognitions (van Lankveld, et al., 1996).

Relational.

Women with dyspareunia have reported less marital satisfaction than women who do not experience pain (Masheb, Brondolo, & Kerns, 2002; Meana, et al., 1997). The extent to which dyspareunia may contribute to the dissolution of relationships and marriages is unknown; however, in Gordon, Panahian-Jand, McComb, Melegari, and Sharp's (2003) vulvar pain study, 76% of respondents endorsed fear that the pain would ruin their relationship. Interestingly, the more adjusted the couple, the lower the pain rating (Meana, et al., 1998). Results from a recent study on couples with PVD have shown that both solicitousness and hostility on the part of the husband were related to higher pain ratings in the women (Desrosiers, Bergeron, Meana, Leclerc, Binik, & Khalife, 2008). How the partner reacts to the situation, how much empathy is present and the ways in which they solve problems together may be important facilitators of healthy adjustment to the problem of intercourse pain. It is also possible that more adjusted couples have sexual stimulation techniques that are more sexually satisfying and less pain producing.

The Special Case of Dyspareunia in Young Women

Clearly dyspareunia is associated with significant negative sequelae ranging from mood disturbances, to generalized sexual dysfunction, to relationship difficulties. This configuration of deleterious correlates is concerning for all women; however, we believe it may be particularly devastating for young women who are starting to develop their sexual self-concept and starting romantic relationships and sexual lives. These are defining experiences wherein young women develop their sense of self as sexual beings

and romantic partners. Young women are also at the crossroads of important life transitions that could be seriously disrupted by sexual pain. It is doubly concerning because young women appear to have the highest prevalence of dyspareunia according to the best estimates we have (22%: Laumann, et al., 1999).

In our study of college women with dyspareunia we found evidence of the negative impact of dyspareunia on both their romantic relationships, as well as on their feelings of self-worth (Donaldson & Meana, 2011). In terms of their sexuality, participants reported lower sexual desire, difficulties with physiological and subjective arousal, interference with their ability to experience orgasm and a tendency to actively avoid sexual contact with their partners. In terms of the non-sexual aspects of their relationships, they reported impairments in being able to connect on an intimate and physical level, resulting in an emotional distancing on the part of both members of the couple. Many reported an increase in conflict and in the level of emotional distress expressed by their partners. These women worried their partners would not remain sexually faithful to them and/or simply leave the relationship.

The stress of the real and imagined impact of intercourse pain on their relationships compounded the negative emotions these women were already experiencing. They reported feeling angry at themselves and their partners, frustrated at the impact of the pain on their lives, embarrassed that they had a problem with their sex life, and depressed about the whole situation. Having dyspareunia also negatively affected how these women viewed themselves. Many reported feeling abnormal when they compared themselves to other women, especially their peers, and they reported self-doubt, insecurity and decreases in self-confidence.

Although dyspareunia can have a serious negative impact on the lives of women of all ages, we are particularly concerned about its early onset in young women. We believe there may be an important difference between the impact of a dyspareunia onset at the age of 50 rather than at the age of 20. In the case of the older woman, there may be a bigger chance that the onset of pain will not seriously derail her self-concept. It is also more likely that she is either in a stable relationship or that the maturity of relationships she might have will better weather the difficulties posed by this problem. In the case of a young woman, dyspareunia may have a more lasting and pervasive impact on the development of self-concept and healthy romantic relationships. This is, of course, an empirical question yet to be answered.

The Question of Treatment-Seeking

Despite the negative consequences of dyspareunia, it appears that treatment-seeking may not be happening as quickly as it should. The delay may be resulting in a further exacerbation of symptoms and associated problems. There are a number of strong theoretical reasons to posit that targeting the symptoms of dyspareunia early may be important in order to arrest or at least manage the instatement of lifelong pain. The pairing of pain with sex in a classical conditioning dynamic, the instatement of hypersensitization, increases in hypervigilance, and a general pattern of avoidance can all combine to complicate the pain problem in the long term. And yet, the little data available on treatment-seeking in women with dyspareunia is disheartening.

Donaldson and Meana (2011) found that 12 of the 14 college aged women with dyspareunia they interviewed had not sought professional help for the problem. Participants articulated a number of barriers to seeking professional health care for this

problem. Some believed in spontaneous remission, that the pain would improve on its own without any major intervention. Most expressed a lack of confidence in a medical solution, lacking faith that the medical profession could possibly have an effective intervention. Since most of the women in this study had no idea what the source or cause of their pain could be, they doubted the existence or possibility of a cure for dyspareunia. Another barrier to seeking treatment was the fear that the pain was a symptom of a severe health condition, like cancer. They did not want to go to the doctor because they were afraid to find out what condition they might have. Additionally, others feared the pain would never go away and they delayed consulting a doctor as they did not want that suspicion confirmed definitively.

The Donaldson and Meana (2011) sample consisted of young women still heavily influenced by their family and the religious values in which they were raised. Going away to college may have given them the opportunity to engage in sexual activity for the first time, but many had not told their parents, siblings and/or friends that they had had premarital sex. One major barrier to seeking treatment was a fear that their parents might discover that they were sexually active. A number of these women reported worrying about how other people would judge them if they told them they experienced pain with intercourse. Some participants lumped sexual and relational problems together and defined these as existing outside the realm of medicine. They did not believe the medical profession would be able to assist them because they did not judge themselves to be suffering from a strictly medical problem.

Some research on women over 30 also exists in relation to treatment seeking. In one survey study, only a quarter of Chinese women with reported dyspareunia and urinary

symptoms indicated they had sought treatment (Stones, Padmadas, & Guo, 2006).

Women of increasing age with vaginal symptoms, including dyspareunia, have been found to have a lower rate of treatment seeking than their younger counterparts (Pastore, Kightlinger, & Hullfish, 2007). In a qualitative study conducted by McGowan, Luker, and Creed (2007), women with chronic pelvic pain initially sought treatment but then disengaged from the process when they found that treatment did not resolve their pain. One study conducted at a sexually transmitted infection clinic in Norway examined the prevalence rate of long-standing vulval problems and entry dyspareunia. Of the 114 who reported vulvar problems (burning, post-coital soreness, dryness and fissures with a duration of at least three months), 68.4% reported having seen a doctor due to the symptoms (Edgardh & Abdelnoor, 2003).

In summary, we know very little about the determinants and barriers of treatment-seeking in women with dyspareunia. Although the treatment of the sexual pain disorders is by no means perfect, there is an increasing number of studies indicating significant rates of success with both surgical and psychosocial interventions for sexual pain (Bergeron, Binik, Khalife, Meana, Berkley, & Pagidas, 1997; Bergeron, et al., 2001; Bergeron, Khalife, Glazer, & Binik, 2008). It behooves us to better understand what keeps women from seeking treatment for this disorder, as treatment has the potential to stem a tide of negative sequelae. It is useful here to turn to the literature on the determinants of help-seeking for other health problems as this may help us understand factors that lead some individuals to seek help for health problems and others not. Some of these factors may be portable to the study of treatment-seeking in dyspareunia.

Influences on Treatment Seeking in General

Health Beliefs

In an attempt to provide insight into the attitudes and beliefs associated with health behaviors, Hochbaum, Leventhal, Kegeles, and Rosenstock introduced the Health Belief Model (HBM) (Rosenstock, 1966). The original theoretical framework posited that an individual's decision to perform a health behavior is influenced by a wish to avoid becoming ill and a belief that a specific health action will prevent illness or reduce the risk of contracting it. The HBM elaborated on the beliefs that might impact this illness-avoidance motivation into four main appraisals: (1) perceived personal vulnerability to or subjective risk of a health condition (*Susceptibility*), (2) perceived personal harm of the condition (*Seriousness*), (3) perceived positive consequences of a health behavior (*Benefits*), and (4) perceived negative aspects related to engaging in a health behavior (*Barriers*). In a later revision, Rosenstock, Strecher and Becker (1988) recommended the addition of *Self-Efficacy (SE)* as a predictive factor of health promoting behaviors, suggesting that people are motivated to engage in a behavior based on efficacy expectations, defined as their perceived competence in the enactment of the specified health behavior. *Health Motivation*, the generalized state of intent that results in behaviors to maintain or improve health, was later added to the HBM, the addition of which has shown to increase the predictive validity of the model (Champion, 1984; 1993).

The revised HBM has been used in the context of a variety of health prevention and intervention strategies to assess patients' motivations in performing health behaviors. The impact of each HBM dimension appears to be partly dependent upon the type of health

behavior being considered. Millar and Millar (1995) asked half of their 96 participants to think of disease detection behaviors (i.e., cholesterol level checks, regular dental exams, regular eye exams, skin cancer checks, blood pressure checks) while the other half were asked to think of health promotion behaviors (i.e., adhering to a low-fat/low-cholesterol diet, brushing and flossing teeth on a regular basis, wearing sunglasses or applying sunscreen when exposed to bright sunlight, participating in vigorous exercise 3-4 times a week). Participants were given 20 seconds to imagine performing the behavior and then were asked to spontaneously generate statements regarding the behaviors imagined which were then content analyzed for elements of the HBM. Individuals considering health detection behaviors produced more statements about the severity (*Seriousness*) of and *Susceptibility* to the illness than individuals who considered health promotion behaviors. Additional responses regarding other benefits not related to the disease were also generated, suggesting the perceived *Benefits* of behaviors aimed at improving one's general health. For example, one participant mentioned that sunscreen "moisturizes her skin" and another mentioned that low-fat/low-cholesterol diet "tastes good."

One study of young college women examined osteoporosis-preventive behaviors such as the consumption of calcium (CA) and performance of weight-bearing exercise (EX) (Schmiege, Aiken, Sander & Gerend, 2007). Baseline measures of intention at the time of the study as well as behavioral measures six months later were assessed. Perceived *Barriers* were negatively related to intention and they were the only significant predictor of behavior. Another study using the expanded health belief model on CA and EX in college women found that exercise *Self-Efficacy* and *Barriers* to exercise were most predictive of overall CA and EX behaviors (Wallace, 2002). It is possible that because of

the distal nature of developing osteoporosis, *Barriers* tend to be most predictive of health behavior as they immediately affected the lives of these women. *Seriousness* of and *Susceptibility* to a condition that these women were not likely to develop for many years not surprisingly failed to predict behavior. Other studies have addressed osteoporosis-preventing behaviors (OPB; i.e., calcium intake and use of osteoporosis medication) in postmenopausal women, whose lives are more immediately impacted by bone density loss. After receiving their bone density scan results, women showed an increase in perceived *Susceptibility* to osteoporosis as well as an increase in OPB when compared to women who did not receive bone density scans (Estok, Sedlack, & Doheny, 2007; Sedlack, Doheny, Estok, Zeller, & Winchell, 2007).

Some research on the extent to which the HBM can predict smoking cessation has found that perceived *Susceptibility* is linked to smoking cessation behaviors (Manfredi, Lacey, Warnicky, & Petraitis, 1998; Norman, Conner, & Bell, 1999; Tessaro, et al., 1997). In older individuals with chronic-obstructive pulmonary disease (COPD), Schofield, Kerr and Tolson (2007) found that approximately 60% of participants accurately perceived smoking as directly linked to the progression of their disease and yet they continued to smoke. Only one participant listed a benefit to quitting while the remaining 21 participants listed a variety of *Barriers* such as it was harmful to quit, they would become more anxious and have difficulty breathing, and that it would be too hard to quit because they were addicted.

In another study investigating smoking cessation in community college students (Prokhorov, et al., 2007), participants were assigned to receive either standard smoking cessation advice or computer-assisted smoking cessation counseling. Participants

completed a computerized questionnaire assessing a wide range of factors associated with smoking and smoking cessation, including four health belief model variables: perceived vulnerability (*Susceptibility*) to the effects of smoking, perceived *Seriousness* of the consequences of smoking, and costs (*Barriers* to quitting) versus *Benefits* of quitting smoking. Regarding *Susceptibility*, most participants (93%) reported their health had been negatively affected by smoking; although 79% indicated they had no symptoms or illness caused by smoking. Also, participants reported more *Benefits* to smoking and more *Barriers* to quitting. In a study of male Chinese smokers, teachers, factory workers and medical workers were randomly selected to complete questionnaires that queried their attitudes, beliefs and environmental factors associated with smoking, as well as their intentions to quit (Wang, Borland, & Wheland, 2002). *Susceptibility* and *Seriousness* were found to be predictive of outcome expectancy (how strongly they believed they would quit smoking in the next six months) and outcome incentive (how important it was to them that they quit smoking in the next six months).

The HBM has also been applied to the study of breast self-examination (BSE) (Champion, 1984). Champion and Miller (1992) asked 362 women 35 years and older to participate in two telephone interviews regarding attitudes, knowledge, intent and experience regarding BSE. The second interview was conducted a year after initial contact. They found that *Health Motivation* and *Susceptibility* were positively related to BSE and *Barriers* were negatively related to BSE. Contrary to expectations, *Susceptibility* was also positively related to *Barriers*, suggesting that the greater women assessed their breast cancer susceptibility to be, the more fear acted as a *Barrier*. Women may identify more *Barriers* to BSE when they are apprehensive that performing the exam

might likely reveal a malignant lump. Talbert (2007) assessed breast cancer screening in African American middle class women and found the *Barriers* of fear and fatalism to be negatively related to breast cancer detection compliance. In a study on Jordanian women, *Health Motivation* and *Susceptibility* were positively and *Barriers* negatively related to BSE in the previous year whereas *Benefits*, *Susceptibility* and *Health Motivation* were positively associated with intention to perform BSE in the future (Petro-Nustus & Mikhail, 2002). In regards to mammography, an increase in perceived *Benefits* (belief that a mammogram can find breast lumps early) has been found predictive of forward movement in terms of Prochaska and Diclemente's (1982) stages of behavior change (e.g., Precontemplation, Contemplation, Preparation, Action, Maintenance) (Menon, Champion, Monahan, Daggy, Hui, & Skinner, 2007).

In summary, the HBM has provided a reliable theoretical framework with which researchers can assess some of the factors influencing health behaviors. Although there is variability in the extent to which HBM dimensions predict health detection versus health promotion behaviors, many of the health behaviors that have been studied have been found to be partly contingent on HBM dimensions. *Barriers* and *Susceptibility* appear to be the most robust and predictive dimensions in terms of commitment to most health behaviors. However, results tend to vary depending upon the specific type of disease/illness and behavior being addressed.

Cognitive and Emotional Styles

The HBM has been applied primarily to health promotion and disease prevention or detection behaviors. Turning our attention specifically to treatment seeking, studies have found disease severity (*Seriousness*) positively linked to treatment seeking behaviors,

such as diagnostic testing (Dawson, Savitsky, & Dunning, 2006). However, factors other than those covered by HBM dimensions have been implicated in the determination of treatment seeking. Research focusing on mediators of treatment seeking behavior has concentrated more on dispositional, cognitive and emotional processing styles (i.e., tendencies toward health anxiety, depression, hypochondriasis, hypervigilance, catastrophization, negative mood states and neuroticism).

Depression and Negative Affect.

Research pertaining to how depression impacts treatment-seeking has revealed findings suggesting higher use of health care services and the bidirectional relationship between depression and medical illnesses may explain the higher use (Benton, Staab, & Evans, 2007). One study examined data from non-institutionalized individuals over the age of 50 who participated in the Survey of Health, Ageing, and Retirement in Europe (Peytremann-Bridevaux, Voellinger, & Santos-Eggimann, 2008). Those evidencing depressive symptoms were more likely to utilize health care services (e.g., outpatient visits, medication, hospitalization, surgery, and home healthcare) over the previous 12 months. Another study investigated the incremental effect of major depression on health care utilization in patients with chronic medical conditions; hypertension, diabetes mellitus, coronary artery disease, congestive heart failure, stroke or cerebrovascular event, chronic obstructive pulmonary disease, and endstage renal disease (Edege, 2007). The 12-month prevalence and odds of major depression was high in individuals with chronic medical conditions, and major depression was associated with significant increases in utilization (ambulatory visits and emergency room visits), lost productivity and functional disability. A similar study compared the health-related quality of life,

disability/work productivity, and health care utilization in a variety of medical disorders with and without comorbid major depressive disorder (MDD) (Baune, Adrian, & Jacobi, 2007). Medical diagnoses included respiratory, cardiovascular, allergic, endocrine/metabolic, gastrointestinal, and neurological diseases. When there was comorbidity of these conditions with MDD, outpatient doctor visits over the prior 12 months was found to be significantly higher (24-42%), except for those with respiratory diseases.

Affect in general has been found to be related to adjustment to chronic illnesses and pain disorders. Negative affect in patients suffering from hypertension, diabetes, cancer and rheumatoid arthritis, has been related to lower self-esteem and poorer overall adjustment to illness (Felton, Revenson, & Hinrichsen, 1984). Heart patients with higher levels of positive affect have been found less likely to be readmitted for cardiac issues (Middleton & Byrd, 1996), while negative affect in heart transplant patients has been associated with poor adjustment: increased neurological symptoms, lower mobility function, more health uncertainty, more sleep problems, poorer recreational functioning and more physical limitations (Rybarczyk, 2007). Negative affect may also play a significant role as a risk factor for prostate, colorectal, and lung cancer (White, English, Coates, Lagerlund, Borland, & Giles, 2007). Prostate cancer survivors with high negative affect were found to be more adversely affected by the disease years after treatment and to continue to engage in a range of coping strategies to attenuate the negative psychological impact and intensity of the disease's effects (Blank & Bellizzi, 2006). Similar findings related to adjustment have also been found in breast cancer patients (Beckham, Burker, Lytle, Feldman, & Costakis, 1997; Bower, Meyerowitz, Desmond,

Benaards, Rowland, & Ganz, 2005). Negative affect has been found to impact adjustment in pain disorders as well. In patients suffering from scleroderma, individuals with higher negative affect scores engaged in maladaptive coping strategies and reported greater disease-related pain (Hansdottir, Malcarne, Furst, Weisman, & Clements, 2004). Similar results have been found in the adjustment of patients with rheumatoid arthritis and fibromyalgia (Reich, Johnson, Zautra, & Davis, 2006; Revenson, & Felton, 1989).

Pain appears to be particularly sensitive to an individual's emotional state. Even the temporary experimental induction of a negative mood can result in increased reports of pain (Davis, Zautra, & Reich, 2001). Several studies have shown a positive relationship between neuroticism and pain experience (Goubert, Crombez, & van Damme, 2004; Gracely, et al., 2004; Sullivan, Lynch, & Clark, 2005), with a high comorbidity of depression and anxiety in pain patients (Tan, Jensen, Thornby, & Sloan, 2008). The expression of emotions can also impact the experience of pain. Conflict over emotional expression and inhibition of emotions regarding pain can lead to obsessive thoughts about the pain, increasing the risk of developing stress related diseases such as heart disease, ulcers, cancer (King & Emmons, 1990; Pennebaker, 1985).

If affect impacts the individual's experience of disease or pain, then one would expect that affect would also have some influence on an individual's treatment-seeking behavior. There is some data supporting the relationship between negative mood states and health care utilization. Patients who sought treatment for irritable bowel syndrome (IBS) reported higher levels of emotional distress and greater health worries than those who had not sought treatment (Drossman, et al., 1988). A study investigating the effects of therapeutic writing of emotional disclosure for women with fibromyalgia found that the

exercise led to decreases in negative affect which was consequently linked to a reduction in health care utilization (Gillis, Lumley, Mosely-Williams, Leisen, & Roehrs, 2006). In another study, arthritis patients with higher levels of negative affect reported experiencing greater perceived pain and those with higher levels of positive affect utilized health care services less frequently (Villanueva-Torrecillas, 2004). Negative affect has also been found to be positively correlated with health care utilization in a sample upper-middle class, Caucasian adults aged 73 years and above who suffered from a wide variety of medical conditions (Maher, 2005). Overall, the current literature suggests that for a variety of pain disorders, the greater the psychological distress or negative affect a person experiences, the more likely they are to use health care services.

Neuroticism has also been found to be a psychological determinant in treatment seeking. In an evaluation of factors associated with the use of healthcare several years after a severe burn injury, Wikehult, et al., (2005) found that patients treated in a burn unit from 1980-1995 who were still utilizing healthcare due to their burn injury, approximately nine years later ($SD=4.8$), scored significantly higher on Neuroticism than those who were not still utilizing healthcare. Another study investigating the relationship of neuroticism to health and use of services in an elderly community sample found a positive correlation between neuroticism in elderly women and the number of different professionals consulted in the previous six months (Jorm, Christensen, Henderson, Korten, Mackinnon, & Scott, 1993). Van Hemert, Bakker, Vandenbrouke and Valkenburg (1993) studied baseline psychological distress, as measured by a neuroticism scale, as a predictor of self-reported use of medical care (treatment by a physician and

current use of medication) nine years after initial treatment. They found neuroticism and health care treatment to be positively associated in women between the ages of 45 and 64.

In summary, a variety of psychological factors appear to influence treatment-seeking. Health anxiety, depression, somatic amplification and hypervigilance, catastrophization, negative mood states have all been found to be related to health care utilization. The attentional bias towards health related information and symptoms, associated with both health anxiety and catastrophization, may help explain the tendency toward treatment-seeking. However, individuals evidencing these emotional and cognitive styles do not appear to experience much relief or benefit from this treatment-seeking behavior. It is possible that an individual's reaction to their disease or illness may contribute to how they respond to attempts at treatment.

Health Anxiety.

Health anxiety, defined as a significant concern about health in the absence of pathology or excessive concern when there is some degree of pathology, shares substantial overlap in symptomatology with other disorders, such as hypochondriasis, panic disorder, generalized anxiety disorder (GAD), and obsessive-compulsive disorder (Walker & Furer, 2006; Wheaton, Berman, Franklin, & Abramowitz, 2010). Researchers and clinicians have generally considered hypochondriasis to be an extreme form of health anxiety (Sacco & Olczak, 1996; Warwick & Salkovskis, 1990) and the DSM-IV-TR (APA, 2000) has specific diagnostic criteria for diagnosing hypochondriasis. The characteristics of health anxiety and hypochondriasis are similar and the terms are often used interchangeably. Differentiating sub-clinical levels of health concern from hypochondriasis, however, allows for a better understanding of the degree of impact the

individual's health focus may be having on the presentation of symptoms (Salkovskis, Rimes, Warwick, & Clark, 2002). In terms of general health behavior, the focus in the literature has been primarily on health anxiety.

Cognitive-behavioral conceptualizations of health anxiety propose that it is characterized by maladaptive cognitive biases for illness-related information and selective attentional bias for externally and internally occurring information. It is posited that these biases maintain health anxiety (Warwick & Salkovskis, 1990). Lees, Mogg and Bradley (2005) assessed whether individuals with high levels of health anxiety (in this study conceptualized as general health anxiety as well as anxiety sensitivity, which is a fear that symptoms of anxiety are harmful), showed enhanced attentional bias for external health-threat cues. This was assessed through the use of a visual probe task in which health-threat and neutral pictures and words were presented. Individuals with high levels of anxiety sensitivity, but not general health anxiety, demonstrated enhanced initial attentional bias towards pictorial health-threat stimuli compared with low anxiety sensitivity individuals. This may indicate that anxiety sensitivity responds more to suggestions of immediate threat (e.g., increased heart rate appraised as leading to an imminent heart attack) than general, long-term threats (e.g., getting a serious illness in the future). Similar results regarding attentional bias were found using a modified Stroop task, in which individuals with high anxiety had slower response times (indicating salience and cognitive interference) to illness-related stimuli than to other emotionally laden stimuli (Owens, Asmundson, Hadjistavropoulos, & Owens, 2004). This type of attentional bias has also been implicated in a tendency to ignore positive health information in favor of more catastrophic information and to increase intensity of anxious

feelings (Owens, et al., 2004). There also appears to be a memory bias for health words in high health anxious individuals, suggesting a negative emotional association for all that is health-related (Ferguson, Moghaddam & Bibby, 2007).

The health threat cognitive bias appears to ultimately have an impact on treatment-seeking behavior. Health anxiety has been linked to more frequent health care utilization, such as frequent doctor visits, doctor shopping, requests for expensive diagnostic tests and adhering to unnecessary treatments (Barsky, Ettner, Horský, & Bates, 2001; Hiller, Fichter & Rief, 2003; Lucock & Morley, 1996; Salkovskis & Warwick, 2001; Seivewright, et al., 2004). This pattern of health-care utilization is also reflected in the seeking out of health information online more often and in the higher frequency of medical appointments evidenced in individuals with high health anxiety (Eastin & Guinsler, 2006). However, high health anxiety has also been found to have a paradoxical effect such that certain individuals thus afflicted avoid healthcare professionals altogether for fear of being diagnosed with a serious disease or because they are dissatisfied with their previous healthcare experiences (Walker & Furer, 2006).

Interestingly, seeking and receiving treatment often fails to improve the psychological condition of individuals with high levels of health anxiety (Lucock, White, Peake, & Morley, 1998; Miles & Wardle, 2006), even when queried a year after initial treatment seeking (Fernandez, Fernandez & Amigo, 2005). It appears that they fail to be reassured by health professionals. In a study focusing on reactions of women who had received a benign diagnosis of breast symptoms, those who were not reassured had higher levels of health anxiety, perceived stress, fear about breast cancer treatment, and general anxiety than women who had felt reassured by their medical consultation (Meechan, Collins,

Moss-Morris, & Petrie, 2005). This phenomenon is concerning given that women experiencing continued distress after such a diagnosis have been shown to be reluctant to adhere to recommended follow-up after receiving a benign breast symptom diagnosis (Andrykowski, et al., 2001). The tendency to avoid continued care in those with health anxiety may be a common trend across health conditions, contributing to a poor prognosis for treatment (Luconi, et al., 2007).

Somatic Amplification and Hypervigilance.

Other than in the case of preventive health care, somatic symptoms are usually what compel individuals to consult a medical professional. This otherwise functional awareness of one's body can, however, develop into a maladaptive perceptual and cognitive process that has been termed somatosensory amplification (Barsky, 1992). Somatosensory amplification refers to the tendency to experience somatic sensations as intense, noxious and disturbing. The process of this amplification is considered to be mediated by the belief that one has a disease, suggestibility and negative expectations about the future course of the disease, adoption of the sick role, and stressful events. Three components of somatosensory amplification have been described: (1) bodily hypervigilance that involves heightened self-scrutiny and increased attention to unpleasant bodily sensations; (2) the tendency to select and focus on certain relatively weak or infrequent sensations; and (3) the tendency to appraise visceral and somatic sensations as abnormal, pathological, and symptomatic of disease, rather than as normal bodily functioning (Barsky, Goodson, Lane, & Cleary, 1988; Barsky, 1992).

Somatic amplification has been found to be related to increases in reporting of somatic symptoms (Duddo, Isaac & Chaturvedi, 2006), with a mediating effect of affect

and mood states (i.e., anxiety, depression and negative affectivity/neuroticism) (Barsky, et al., 1988; O'Brien, Atchison, Gremillion, Waxenberg, & Robinson, 2008). There also tends to be a high comorbidity with hypochondriasis (Barsky and Wyshak, 1990), although amplification may only be one facet of hypochondriasis (Barsky, Wyshak, & Klerman, 1990). And although a link exists between somatization and psychological symptoms, a person's appraisal of their symptoms may have a significant impact on their physical and psychological well-being. Robbins and Kirmayer (1991) found that a somatic attributional style is predictive of the number of somatic complaints presented to family physicians. Individuals with a somatic attributional style may focus their attention on bodily symptoms of emotional distress and may also exhibit an attentional bias towards illness-related information (Takayanagi, & Fujiu, 2008). By pursuing the physical and somatic remedy, patients and physicians fail to address the psychological source and symptoms of the emotional conflict (Bridges, Goldberg, Evans, & Sharpe, 1991; Kirmayer, 1984; Verhaak & Tjhuis, 1994).

Some research on somatic amplification in the context of pain has focused on the relationship between somatization and alexithymia (difficulty identifying and describing feelings, having an impoverished fantasy life, and excessive preoccupation with physical symptoms and external events), hypothesizing that alexithymic individuals amplify unpleasant internal symptoms (Kano, Hamaguchi, Itoh, Yanai, & Fukudo, 2007). Chronic pain patients have been found to be significantly more alexithymic than controls (Celikel & Saatcioglu, 2006). One study examining the effect of emotion-regulation strategies in women with fibromyalgia found that the intense experience of emotions was related to more pain in those women who had greater levels of alexithymia (van Middendorp,

Lumley, Jacobs, van Doornen, Bijlisma, & Geenen, 2008). Another study investigating the prevalence of mood, anxiety and disability disorders in patients who experience daily headaches or migraines found high levels of anxiety and depressive symptomatology to be associated with alexithymia (De Filippis, Salvatori, Coloprisko, & Martelletti, 2005).

Treatment-seeking behavior in individuals with high levels of somatic amplification has been characterized as consisting of frequent use of health services and specific illness attitudes including excessive health related worry, bodily preoccupation, a conviction of a more sinister disease-related cause for symptoms and a fluctuating resistance to reassurance (Duddo, et al., 2006). Often, medical consultations result in null findings for organic causes, thus frustrating the patient who will then search for another doctor (“doctor shopping”) in search of a definitive answer. This cycle contributes to further amplification of symptoms and high rates of utilization of health care resources (Duddo, et al., 2006). For example, one study found that somatizing patients in primary care practice had almost twice the outpatient utilization in the preceding year than that of non-somatizing patients (Barsky, et al., 2001). Similar results have been found regarding outpatient and inpatient medical care utilization with the accrual of twice the medical care costs in somatizing patients than in non-somatizing patients (Barsky, Orav, & Bates, 2005). Jackson, et al., (2006) investigated referred patients seeking consultation from neurology, gastroenterology or cardiology clinics and found that number of bodily symptoms was associated with number of medical consultations within the six months after these patients’ referral. A Dutch study investigating the impact of mental illness on non-psychiatric health care utilization found that patients with mental illness reported more frequent use of primary care (Hansen, Fink, Sondergaard, & Frydenberg, 2004).

However, those with somatoform disorders had the highest risk for increased utilization, much as has been found in other studies (e.g., Grabe, et al., 2003).

Catastrophization.

The construct of catastrophization is closely related to health anxiety and somatic amplification but refers specifically to one type of appraisal – an exaggeration of the negative aspects of the illness or pain experience and of the potential deleterious consequences of the experience. This construct has been studied primarily in regard to pain. According to Chaves and Browne (1987), pain catastrophization occurs when individuals magnify or exaggerate the threat value or seriousness of pain sensation. The construct is broadly considered to be an exaggerated negative orientation towards actual or anticipated pain experiences (Sullivan, Bishop, & Pivik, 1995). It is characterized by an experience of heightened pain intensity, increased disability, and difficulty disengaging from pain (Sullivan, et al., 2005; Sullivan, et al., 2001; van Damme, Crombez, & Eccleston, 2004).

The disruptive impact of pain on attention is amplified in those who catastrophize pain (Crombez, Eccleston, Baeyens, Vansteenwegen, Lysens, & Eelen, 1998; Crombez, Eccleston, Van den Broeck, Housenhove, & Goubert, 2002; Vancleef & Peters, 2006). Neuroimaging data in individuals with chronic fibromyalgia has shown that catastrophizers show greater activity in the dorsolateral prefrontal cortex (DLPF), rostral anterior cingulate cortex (ACC), and medial prefrontal cortex (MFC) (Gracely, et al., 2004). These regions have been implicated in pain vigilance, attention, and awareness, suggesting attentional interference. Persons with high catastrophization scores have shown difficulty suppressing pain-related thoughts and behaviors, lending support to the

“attention model” associated with pain, in which acute attention to pain underlies pain catastrophization (van Damme, et al., 2004). A study involving fMRI’s performed on healthy individuals during two pain intensity levels evoked by electrical median nerve stimulations add support to this model (Seminowicz & Davis, 2006). When mild pain was administered, there was a positive relationship between catastrophization and cortical regions in the brain associated with attention.

Pain catastrophization also has a significant impact on the phenomenological experience of the pain itself and on pain behavior. Pain catastrophization scores in those with sickle cell pain have been found to predict pain sensitivity, as these individuals tend to overestimate the pain they will experience in the following six months (Gil, Thompson, Keith, Tota-Faucette, Noll & Kinney, 1993). Elevated levels of self-reported pain and pain-related disability in those who catastrophize may be amplified by pain-related fear as reflected in a cognitive-behavioral model of chronic pain (Crombez, et al., 1998; Severeijns, et al., 2005; Sullivan, Stanish, Waite, Sullivan, & Tripp, 1998).

Not surprisingly, individuals who catastrophize pain utilize health care services more, have longer hospital stays and report higher use of medication than those who do not catastrophize (Goubert, et al., 2002). One study addressing the relationship between attachment style, catastrophization and health care utilization reported interesting results in regards to two attachment styles: preoccupied and fearful (Ciechanowski, Sullivan, Jenson, Romano, & Summers, 2003). The preoccupied style, characterized by excessive vigilance in relationships and intense support-seeking to the point of ‘clinginess’, was compared to the fearful style, which involves the desire for social support inhibited by the fear of rejection and a pattern of approach-avoidance behavior. Chronic pain patients

with a fearful attachment style scored higher on catastrophization and had higher levels of health care utilization as compared to those with a preoccupied attachment style. Another study used the High Risk Model of Threat Perception to address predisposing factors of health care utilization in a primary care population (McGrady, Lynch, Nagel & Zsembik, 1999). They found somatization and catastrophization to be related to higher levels of treatment seeking. However, some conflicting evidence exists. Gil, Abrams, Phillips and Williams (1991) did not find a relationship between psychological coping, including catastrophization, and health care utilization in a sample of sickle cell anemia patients. These conflicting results may be related to cultural factors, considering that most sickle anemia patients are African-American and there may be both structural (e.g., access, financial concerns) and cultural barriers (e.g., distrust of medical professions) interfering with the influence of catastrophization on health care utilization.

*Evidence of Health Beliefs and Cognitive/Emotional States and Styles
Specific to Dyspareunia*

Susceptibility, Seriousness and Health Behavior Barriers

As afore-illustrated, research has shown that health promoting behaviors in regard to a number of health challenges (e.g., breast cancer, osteoporosis, smoking, cardiac rehabilitation) is mediated by HBM dimensions and by a number of dispositional psychological factors. The question of particular relevance to us is: to what extent do these HBM dimensions and cognitive/emotional styles predict help-seeking behavior in the case of dyspareunia? Currently, we simply do not know the answer to that question as no research has targeted it directly. Dyspareunia shares some characteristics with other health challenges, but it is also substantially different. Most of the research using the HBM has focused on early detection or preventive health behaviors, neither of which is

applicable to dyspareunia. Dyspareunia does not require detection as there is no hidden component to its onset. It involves pain and a woman knows in short order when she is afflicted with it. Prevention is not relevant either as we do not know enough about the etiology of dyspareunia to hypothesize preventive behaviors. There are, however, some aspects of the HBM that may be helpful in understanding incentives and barriers to treatment-seeking for women who experience pain with intercourse.

The dimension of *Susceptibility* is not applicable to dyspareunia as there are no known risk factors that should make one woman any more worried than another about the possibility of developing the disorder. The dimension of *Seriousness*, however, may play an influential role in whether treatment for dyspareunia is sought. According to the HBM, if an individual considers the symptoms to be significantly harmful, it is more likely that he/she will commit to a given health behavior. However, we have also reviewed research suggesting that *Seriousness* may have a paradoxical effect. Consulting a medical professional carries the risk of discovering a serious illness. The fear of this potential discovery may contribute to the avoidance of the health behavior altogether. We found support for this paradoxical effect as participants in our study reported fear of *Seriousness* as a reason to avoid medical consultation (Donaldson & Meana, 2011).

The HBM dimension of *Barriers* is likely to be a major factor in women's treatment-seeking behavior for pain with intercourse. The women in our study (Donaldson & Meana, 2011) clearly identified a number of barriers to treatment-seeking, including faith in spontaneous remission, lack of confidence in a medical solution, belief in incurability, fear of severity, guilt regarding admission of premarital sex, fear of the stigma associated with sexual problems, and the belief that sexual problems fall outside the realm of

medicine. Finally, perceived *Benefits* of treatment seeking are also likely to be important mediators of whether women with dyspareunia consult a health care professional. The little data available suggests that they may have serious doubts about the benefits of seeking treatment (Donaldson & Meana, 2011). In the Donaldson and Meana study, some women doubted that a cure existed, others were fairly confident that health professionals would not know what to do with their pain, and yet others did not believe that sexual and relational problems were amenable to health interventions.

Curiously, the doubts women in the afore-mentioned sample expressed about the power of health interventions to resolve intercourse pain are not entirely ungrounded. The treatment of dyspareunia is difficult and complete resolution of the pain and associated sexual dysfunction are elusive. Treatment outcome studies have shown reductions in pain without improvement of sexual function, illustrating there is no guarantee that treatment will completely resolve their symptoms (Bergerson, et al., 2001). On the other hand, that same study demonstrated that treatment appears to provide relief for a significant number of women.

Affect and Somatic Reactivity

Although no studies to date have examined psychological mediators of treatment-seeking in dyspareunia, some of the psychological correlates of dyspareunia may provide clues to treatment seeking propensity. Women with dyspareunia have been found to have some of the psychological characteristics, including mood disturbances, somatic focus and catastrophization, linked to health care utilization in the context of other medical conditions.

Negative Affect and Mood States.

Research has fairly consistently found elevated levels of negative affect in women who have pain with intercourse. One study examining the prevalence and type of psychological distress in women with PVD found the most frequently endorsed psychological states included negative affect: experience of personal distress, unhappiness and apprehension (Brotto, et al., 2003). Anxiety, in particular, has been found in a number of samples over the years (Gates & Galasky, 2001; Granot & Lavee, 2005, Jantos & White, 1997; Johannesson, de Boussard, Brodda, & Bohm-Starke, 2007; Meana, et al., 1997; Nunns & Mandal, 1997; Nylanderlundqvist & Berghahl, 2003; Payne, Binik, Pukall, Thaler, Amsel, & Khalife, 2007). In addition to anxiety, some women with dyspareunia develop phobic anxiety. In a study of women who experience introital pain with all attempts at penile vaginal entry, their scores were significantly higher on the Phobia Rating Scale when compared to age-matched healthy women (Brotto, et al, 2003). They also reported significant phobic anxiety to vaginal touch and, specifically, vaginal entry. Women in Meana, et al.,'s (1997) dyspareunia-with-no-physical-pathology group reported more phobic anxiety and erotophobia than controls. However, van Lankveld, et al., (1996) and Bergeron, et al., (1999) found that women with PVD in their samples did not experience any higher levels of fear/anxiety than controls. It is thus important to note that not all samples exhibit anxiety, although cross study comparisons are complicated by the use of different measures.

The extent to which heightened levels of anxiety, when they are present, impact treatment-seeking in women with dyspareunia is unknown. However, we do know that anxiety has been found to be related to treatment-seeking, predicting more daily pain,

medicine usage and health care utilization in other health problems (Levenson, et al., 2008). Meana, et al.'s (1998) study of 76 married or cohabitating women with dyspareunia found anxiety to be positively related to pain ratings. The magnified experience of pain may prompt highly anxious women with dyspareunia to seek treatment. Health anxiety, specifically, was found to be significantly higher in college women who experienced pain with intercourse than in no-pain controls (Meana & Lykins, 2009). Considering that health anxiety has also been found to be associated with avoidance of health care professionals (Walker & Furer, 2006), higher levels of anxiety may predict similar avoidant behavior in women with intercourse pain. It is thus difficult to hypothesize whether anxiety predicts or interferes with treatment-seeking in dyspareunia. Only research can clarify the dynamics of that relationship in the context of intercourse pain.

Depression has also been linked to higher use of health care services (Benton, et al., 2007). In one critical review of empirical findings, evidence suggests a higher prevalence of depression and pain in women (Meana, 1998). Well before research started addressing the relationship between depression and the sexual pain disorders, Jarvis (1984) posited that depression was a cause of dyspareunia. Premature though this conclusion may have been, there was clearly a sense that dyspareunia seemed to be accompanied by depressive affect. In a systematic review, Latthe, Migninni, Gray, Hills and Khan (2006) evaluated risk factors predisposing women to chronic and recurrent pelvic pain and found depression to be a significant factor in women with dyspareunia. Using the Beck Depression Inventory (BDI), Nylanderlundqvist and Berghahl (2003) found over half (58.6%) of the women with dyspareunia scored in the mild to severe depression range.

Jantos and White (1997) found that a large percentage of women with dyspareunia scored high on suicidal ideation and depression. Depressive symptomatology has also been associated with more severe pain reports for women who appraised their dyspareunia to be of non-organic etiology (Meana, et al., 1998). One study investigated women with PVD and healthy controls and found that depression was more often reported by those experiencing PVD (Johannesson, et al., 2007). In our qualitative study, women who experienced pain with intercourse expressed that they were often sad, cried a lot, worried, lost sleep over their concern about the pain, were disappointed and depressed (Donaldson & Meana, 2011). Meana, et al., (1997), found that depressive symptomatology was elevated in women with dyspareunia, but only in those with no obvious physical pathology. It thus appears that there is a strong link between depression and dyspareunia, although the direction of that relationship has not been established.

Not all studies, however, have found that women with dyspareunia suffer more from depressive symptomatology. In a sample of patients from a sexually transmitted infections clinic in Norway, no difference was found between patients with vulvar problems (burning, post-coital soreness, dryness and fissures for duration of at least three months) and asymptomatic patients with regard to having seen a doctor because of depression (Edgardh & Abdelnoor, 2003). Also, Meana, et al., (1998) found that depression (in contrast to anxiety) was not predictive of pain ratings in dyspareunia and van Lankveld, et al., (1996) and Bergeron (1999) did not find elevated levels of depression in their samples of women with PVD.

Considering the potentially negative impact of dyspareunia on women's relationships and self-esteem, it is not surprising that depressive symptoms are found in many samples

of women with dyspareunia. The comorbidity of depressive symptoms and dyspareunia mirrors the comorbidity of depression and pain found in other chronic pain conditions (Weisberg & Boatwright, 2007). Research on other pain conditions and health problems would suggest that the depression experienced by women with dyspareunia would be linked to higher health care utilization, although, again this has yet to be investigated in the case of dyspareunia (Edege, 2007).

Neuroticism has also been found to be a psychological determinant in treatment seeking. Current research suggests a link between neuroticism and sexual dysfunctions in young adults (Ernst, Foldenyi & Angst, 1993). Using the NEO-Five Factor Inventory, Meana and Lykins (2009) found their group of dyspareunia women scored higher on neuroticism than pain-free controls. Donaldson and Meana (2011) found that college-aged women who experienced pain with intercourse reported emotional reactivity generally associated with neuroticism: anger, depressive symptoms, frustration, and declines in self-confidence. One study addressing the psychological profiles of women with PVD found that of the 50 women they surveyed, 37% reported difficulties in managing their anger, 35% endorsed having a need for control and inflated self image and 16% had problems with impulsivity or sensation-seeking (Brotto, et al., 2003). Another study found women experiencing intercourse pain to endorse having perfectionistic traits, difficulty in expressing their feelings and higher levels of irritability and anger (Jantos & White, 1997). Using the Temperament and Character Inventory, Lundqvist and Bergdahl (2005), found that women with PVD in their sample had a personality profile characterized as cautious, careful, insecure, and pessimistic. Another study evaluated 57 women with self-identified vulvar pain and found that they reported

greater distress than controls on measures of negative mood, although there was no relationship between pain severity and affective distress (Masheb, et al., 2002).

It is difficult to ascertain whether these supposed personality traits existed prior to onset of pain or were a consequence of the pain. Research suggests that personality characteristics measured after onset of chronic pain may not be vulnerability factors, per se, as personality scores have been shown to change and improve after treatment (Fishbain, Cole, Cutler, Lewis, Rosomoff, & Rosomoff, 2006). Considering the link between neuroticism and treatment seeking in other conditions (van Hemert, et al., 1993), it is not unreasonable to posit that women experiencing pain with intercourse who also exhibit characteristics of neuroticism may seek out treatment more often. It is possible that the relatively successful treatment may lessen the negative affect of women who developed these seemingly trait-like mood states after the onset of pain.

Somatic Amplification and Hypervigilance.

As mentioned previously, frequent use of health services has also been found to be associated with somatic amplification (Duddo, et al., 2006). A study conducted with Israeli women with PVD found that they demonstrated higher levels of somatization than controls (Granot & Lavee, 2005). One study focusing on the psychological profiles of women with PVD found significant differences between women with PVD and a normal population on somatization, indicating that these women may more often use physical complaints to manage psychological stress (van Lankveld, et al., 1996). In one sample of women with dyspareunia, 42% met criteria for a somatization disorder (Schover, Youngs & Cannata, 1992). Another study examined prevalence and type of psychological distress in 50 women with PVD and found that 27% expressed somatic complaints and health

concerns (Brotto, et al., 2003). Danielsson, et al., (2001) investigated personality differences and the occurrence of somatic symptoms between women suffering from PVD and a non-symptomatic control group. Utilizing the Giessen Subjective Complaints List, a questionnaire on general well-being, vegetative disturbances, pains, and emotionalism, they found that women with PVD in their sample reported significantly more occurrences of somatic symptoms (e.g., pain in the back, neck or shoulders, gastrointestinal symptoms, headache, urinary tract infection, asthma, allergic conjunctivitis, and skin problems or other eczema) than controls. Women who experienced pain with intercourse also scored higher than pain-free controls on somatosensory amplification in another sample of young women (Meana & Lykins, 2009). However, Meana, et al., (1997) found no difference between women with dyspareunia and controls on the Brief Symptom Inventory (Derogatis & Melisaratos, 1983) somatization scale nor on the number of other non-genital pains reported.

Hypervigilance, defined as increased attention to unpleasant sensations, is considered to be an integral part of somatic amplification (Barsky, 1992). Payne, et al., (2005) had seventeen women suffering from PVD and an equal number of controls complete an emotional Stroop and memory recall task, in addition to a series of questionnaires assessing pain-hypervigilance, state and trait anxiety, fear of pain, and anxiety sensitivity. They found that PVD sufferers reported hypervigilance for coital pain and also exhibited a selective attentional bias toward pain stimuli on the emotional Stroop task as compared with controls. In a cross-sectional study conducted by Pukall, Baron, Amsel, Khalife, and Binik (2006), 16 women with PVD and 16 age-matched controls were examined by a rheumatologist, who palpated 9 nonvulvar areas to assess for sensitivity. Women with

PVD reported more pain when palpated and had significantly higher pain sensitivity and unpleasantness ratings. Another study involved the application of different sensations of vibration, warmth, cold, heat, cold pain, and pressure to elicit pain at the posterior and anterior parts of the vulvar vestibule (Bohm-Starke, et al., 2001). They found increased pain sensitivity (allodynia) in these patients when compared to controls. Pukall, et al., (2004) used a vulvalgesiometer, a mechanical device containing springs of varying compression rates which allows for standardized pressure application, to assess tactile and pain thresholds in women with PVD. They found no difference between the women with PVD and control in regards to vestibular tactile thresholds but did find significantly lower pain thresholds and higher unpleasantness ratings in women with PVD. Another study comparing 20 women with PVD and 20 controls on arm and leg pressure pain thresholds (PPT's) before and during a cold pressor test found that women with PVD displayed lower PPT's than controls, implying hypersensitivity in these women (Johannesson, et al., 2007).

Even though several studies suggest that women with dyspareunia report more somatic complaints and show tendencies towards pain sensitivity and hypervigilance, conflicting evidence suggests that not all of these women are more likely to amplify their somatic symptoms. One study found women with dyspareunia did not report more non-genital pains than controls (Meana, et al., 1997). In line with these findings, Bornstein, Zarkati, Goldik and Abramovici (1999) suggest that women with PVD do not differ from those suffering from somatization other than in the fact that they are more outspoken about the bodily inconveniences that are impacting their lives. It is unclear how amplification may influence treatment-seeking in dyspareunia. According to the literature

on somatic amplification, if women with dyspareunia tend to amplify their symptoms, then they might also be prone to “doctor shopping” (Duddo, et al., 2006; Barsky, et al., 2001).

Catastrophization.

Pain catastrophization has been linked to longer hospital stays and reports of higher use of medication (Goubert, et al., 2002; McGrady, et al., 1999) as well as heightened pain intensity (Sullivan, et al., 2001). One study of PVD patients in Israel administered quantitative sensory tests with a Thermal Sensory Analyzer to assess pain threshold via warm sensation produced by the thermode (Granot & Lavee, 2005). The PVD women demonstrated lower pain thresholds and higher magnitude estimation of phasic suprathreshold (level at which heat is of sufficient intensity to produce a physiological effect) stimuli, than women in the control group. They also found that catastrophization scores were significantly higher for coital pain than for experimental pain and that catastrophization was positively associated with a lower pain threshold and higher pain perception. In another study, women with PVD were interviewed, given a gynecological exam and then underwent sensory and tactile thresholds tests (Pukall, et al., 2002). Tactile and pain thresholds were measured on the inner thigh, labium minus and vestibule using modified von Frey filaments. Pressure-pain tolerance was measured on the deltoid muscle and tibia with a pressure tolerance meter. Vestibular tactile thresholds and pain thresholds around the vestibule were lower in the PVD group as compared with controls. Also, in the women with PVD, distress levels increased systematically with the pain ratings. Participants were also administered the Pain Catastrophizing Scale (PCS; Sullivan, et al., 1995) and women with PVD reported significantly higher scores for

intercourse pain than for general pain. Payne et al.'s (2005) sample of 20 women with PVD underwent genital and non-genital sensory testing of the vulvar vestibule, inside the labia minora and on the volar surface of the forearm. On the PCS, women with PVD reported higher pain catastrophizing and vigilance for intercourse pain and non-intercourse pain as compared with healthy participant ratings.

Attention bias to pain, which is hypothesized to maintain pain catastrophization (van Damme, et al., 2004), also appears to play a significant role in women with dyspareunia. Payne, et al., (2005) found that PVD sufferers reported hypervigilance for coital pain and also exhibited a selective attentional bias towards pain stimuli on the emotional Stroop task as compared with controls. The hypervigilance of women experiencing pain with intercourse appears to be a manifestation of this attentional bias. The pain stimuli may be distracting them from sexual stimuli during sexual activity, thus impairing sexual arousal and potentially exacerbating the pain.

Research has found pain catastrophization to be a predisposing factor to treatment seeking (McGrady, et al., 1999). The reported tendency for women with dyspareunia to catastrophize intercourse pain would suggest high levels of treatment seeking as well. However, conflicting evidence related to catastrophization in sickle anemia patients suggests moderating influences, such as culture (Gil, et al., 1991). The fact that dyspareunia is a disorder that involves the socio-culturally loaded area of sexuality suggests that the mediating effect of factors such as catastrophization may be diminished or altered in the case of this unique health problem. Embarrassment or stigma related to having a sexual problem may override catastrophization or other factors as mediators of treatment-seeking.

In summary, although the HBM has been effective in illuminating factors related to early detection and preventive health behaviors, some of its dimensions do not appear to be relevant to dyspareunia; with the exceptions of *Seriousness* and *Barriers*. The little data that does exist suggests that *Seriousness* could work to either facilitate or interfere with treatment seeking while it seems that there are significant *Barriers* to help-seeking in the case of dyspareunia. Some of the psychological correlates of dyspareunia also happen to coincide with characteristics that have been found to be predictive of treatment seeking in other disorders. Again there is no current research that has directly addressed dyspareunia treatment seeking predictors. The anxiety, depression, and neuroticism evidenced in women with dyspareunia might suggest higher levels of health care utilization; however, negative affect may lead them to avoid health care professionals for reasons of fear, pessimism or even embarrassment. It remains unclear whether women with dyspareunia engage in somatic amplification; however, there is sufficient evidence to suggest that this potential propensity may lead to frequent health care use. Catastrophization could be a predisposing factor to treatment seeking although it may be mediated by other factors, such as the sexual nature of the problem and a whole host of inhibitors of treatment-seeking related to the stigma associated with sexual problems. Research is needed to aid our understanding of the complex set of conditions involved in the experience of dyspareunia and enable us to start teasing apart which factors are related to treatment seeking in what ways.

The Sexual Dysfunction Reporting Dilemma

An investigation of the psychological correlates of treatment seeking in a variety of health problems is useful in the generation of hypotheses about the factors that might be

associated with treatment seeking in the case of dyspareunia. However, these other conditions do not involve sexuality. Extrapolations from them to dyspareunia may thus fail to capture important treatment barriers related specifically to sexual problems. Dyspareunia is not the only under-reported sexual concern. Women's sexual problems in general appear to be under-reported and under-treated (Yadav, Gennarelli, & Ratakonda, 2001). To better assess how the sexual nature of dyspareunia affects treatment seeking, it is useful to review the relevant treatment-seeking literature in relation to sexual dysfunctions.

A number of studies have investigated the percentage of individuals who discuss their sexual concerns with their physicians. For example, Moreira, Glasser, and Gingell, (2005) found that of the 1500 participants, aged 40 to 80, with whom they conducted phone interviews in Spain, only 17.7% of men and 18.6% of women reported speaking to a doctor about their sexual concerns. Of 1080 patients surveyed at 37 north London practices, only 30% women and (21%) men reported having consulted their doctor for sexual advice (Nazareth, Boynton, & King, 2003). Studies using telephone help-lines for information on sexual and reproductive health issues have found similar percentages of doctor consultation: 32% of men calling in and reporting sexual problems (Papaharitou, et al., 2006) and 34.3 % of women calling a help-line dedicated to sexual health awareness, education and research had consulted with a doctor (Papaharitou, Nakopoulou, Kirana, Iraklidou, Athanasiadis & Hatzichristou, 2005). Ansong, Lewis, Jenkins, and Bell (1998) randomly selected 5198 men between 50 and 76 years of age who were living in four rural counties in central New York State. Of the 649 men who reported having experienced impotence 6 months prior, 66.6% indicated they had not

sought treatment. A telephone survey conducted in Canada was completed by 500 men and 507 women between the ages of 40 and 80 (Brock, Moreira, Glasser, & Gingell, 2006). Of the sexually active respondents who reported experiencing at least one sexual problem, 38.4% of men and 30.6% of women had not taken any action. Yet another study asked a nationally representative probability sample of community-dwelling Americans aged 57 to 85 years, "Since you turned 50, have you ever discussed sex with a doctor?" Overall, only 38% of men and 22% of women reported having discussed sex with a physician since the age of 50 (Lindau, Schumm, Laumann, Levinson, O'Muirheartaigh, & Waite, 2007).

One Spanish study conducted telephone surveys between 2001 and 2002 to ascertain how individuals sought help for sexual problems (Moreira, et al., 2005). Both men (750) and women (750) between the ages of 40 and 80 years were asked whether they had sought help or advice from a series of sources: talked to a medical doctor, taken prescription drugs/devices or talked to a pharmacist, talked to a psychiatrist or psychologist or marriage counselor. The majority of men (79.4%) and women (80.2%) had not sought help from any type of health professional. Of the respondents who were sexually active and reported at least one sexual problem, 38.9% did not take any action, i.e., they did not seek help or advice. Similar results have been found in a Canadian telephone survey of individuals between the ages of 40 and 80 (Brock, et al., 2006).

Reporting may be lower in non-Western countries. Moreira, Kim, Glasser, and Gingell (2006) conducted a survey in Korea during 2001 and 2002 as part of the Global Study of Sexual Attitudes and Behaviors (GSSAB). The vast majority of the 1,200 participants had not sought help from a health professional (92.7% of men and 96.8% of

women). Only 2% had talked to a medical doctor about a sexual problem. It is possible that cultural beliefs in Korea may interfere with medical help-seeking. This study also found that 1) thinking it is OK to use medical treatment for sexual problems and 2) a belief in religion guiding sexual behavior were attitudes positively associated with seeking medical help.

Much research has focused on the reporting of the two most common male sexual dysfunctions, erectile dysfunction (ED) and premature ejaculation (PE) (Ansong, et al., 1998; Berner, Leiber, Kriston, Stodden, & Gunzler, 2008; Papaharitou, et al., 2006, Shabsigh, Perelman, Laumann, & Lockhart, 2004). Considering the sensitive nature of these disorders, it is not surprising that reporting is low. Porst, Montsori, Rosen, Gaynor, Grupe and Alexander (2006) found that out of 2,754 men with PE, only 9% reported having consulted a physician for the condition. Over half (52.2%) of those who had not talked to a physician about their PE indicated that they had never considered speaking to a physician about this problem. Of those who had consulted a physician, 69.5% had initially presented with a different health-related concern.

It is possible that the low reporting percentages for sexual complaints may be explained by individuals preferring to utilize informal sources of assistance for sexual issues. In a study on PE, approximately 80% reported they tried to get as much information as possible about health problems, but only one in two agreed that their doctor was the best source of information (Porst, et al., 2006). Catania, Pollack, McDermott, Qualls, and Cole, (1990) asked 503 women attending “pleasure parties” in the California Bay Area and women attending church meetings and college classes in Colorado how they sought information to address difficulties interfering with a satisfying

sexual relationship. “Pleasure parties” referred to private gatherings of friends and acquaintances in which representatives of companies selling sexual aids (i.e., massage oils, vibrators, books, etc.) displayed, discussed and sold their products. The church meetings consisted of Christian-sponsored adult education classes for married couples. The university classes were Introductory Psychology courses at the University of Colorado, Colorado Springs. Of the informal sources they utilized, 56% consulted their sexual partner, 48% consulted friends, and 19% consulted relatives. Despite a high prevalence of sexual problems (43%) in this group, few women employed formal help (psychotherapy, 3%; medical, .5%). Other studies have also found that talking to one’s partner about sexual concerns is the most common action taken by both men and women (Brock, et al., 2006). These findings reflect the theory posited by Gross and McMullen (1983) regarding the normative sequence to help-seeking actions: i) people will first consider self-help actions; ii) if that fails, decisions regarding social help sources are made; iii) the most convenient and least “costly” social sources will be considered/used first; and iv) if informal help fails, then formal help is considered.

Factors Influencing Reporting/Treatment Seeking of Sexual Dysfunctions

Gender.

Gender of the patient may be a factor in reporting sexual concerns to a physician. Women have been found to be less likely than men to discuss sex with a physician (Lindau, et al, 2007). In relation to treatment, this finding is especially disconcerting as one study found that men who reported a problem were twice as likely to have received help as were women with an equivalent problem (Dunn, Croft, & Hackett, 1998). A possible reason for women’s reluctance to report their sexual symptoms may be concern

about being diagnosed with a sexual disorder and the stigma related to such a diagnosis. Nazareth, et al. (2003) found that significantly fewer men (22%) than women (40%) in their sample of 1080 patients who consecutively attended 37 north London general practices received at least one ICD-10 diagnosis of sexual dysfunction. Also, women in this study were significantly more likely to receive a diagnosis of lack or loss of sexual desire and dyspareunia than men. At least in term of sexual desire, it is possible that women's sexual concerns may be more often pathologized than those of men.

Other researchers have offered additional explanations for why women do not report their sexual problems as often. Ferenidou, Kapoteli, Moisi, Koutsogiannis, Giakoumelos, and Hatzichristou (2008) surveyed 164 women visiting a general hospital for symptoms unrelated to sexual function. Although 69.5% reported experiencing at least one sexual problem, only 26.2% of all women indicated they would like to talk to their doctor about it. More importantly, only a little over half (58.5%) reported not being bothered by their sexual problem. According to the authors, experiencing more than one sexual problem, as well as the perception that their sexual function and satisfaction is hindered may be necessary for women to report their sexual concerns to their doctor. Gender of the physician may also play a role in treatment seeking of sexual concerns. Dunn, et al. (1998) found that 54% of women prefer help from a female professional whereas only 24% of men preferred help from a male professional in regards to sexual concerns.

Education.

It is possible that an individual's level of education may influence whether they seek medical help for their sexual concerns. One study found that both college education and

gender influenced the likelihood of whether men and women sought assistance from a health care professional (Glasser, Nicolosi, Duarte, & Gingell, 2007). A college education was negatively associated with the likelihood of seeking medical help in men whereas the association was positive in women.

Attitudes and Beliefs Regarding Sexual Dysfunctions

Particular attitudes and beliefs have been found to correspond with not seeking help for sexual dysfunctions. Participants have reported not seeking medical counsel for sexual problems because they thought the issue was not very serious or that they were waiting for the problem to go away (42.7% of men and 44.1% of women) (Moreira, et al., 2005). One study addressing attitudes associated with not discussing PE with a physician found that participants experienced embarrassment at discussing their condition, doubted that any medication could help them control their ejaculation, worried about becoming dependent on medication to perform sexually, and were resigned to living with the condition (Porst, et al., 2006). In another study investigating why men with ED refrained from seeking treatment, participants reported they were either not aware of effective treatment for ED or believed available treatments were risky or harmful (Ansong, et al., 1998). Similar beliefs and attitudes have been found in other studies on PE and ED (Dunn, et al., 1998).

Older adults have also reported attitudes regarding sexuality that interfere with the reporting of sexual concerns. A study of individuals between the ages of 40 and 80 found that respondents did not consult a medical professional because they felt the sexual problem was a part of normal aging, they were comfortable as they were, they did not think it was severe enough, they were waiting for the problem to go away, and they did

not believe the doctor would be of much help (Brock, et al., 2006). Interestingly there are also age-related attitudes that interfere with treatment seeking in young populations. In one study addressing barriers to ED treatment, the youngest group (20-39 years) was least likely to seek treatment and indicated they believed that their ED would resolve spontaneously.

In contrast, research has also found that certain attitudes and beliefs actually promote treatment seeking. One study found that general attitudes which significantly increased the likelihood of seeking medical advice for sexual problems included thinking that a doctor should routinely ask patients about their sexual function (among men), being very or somewhat dissatisfied with their sexual function, and the belief that sex is a very important part of overall quality of life (among women) (Moreira, Glasser, Nicolosi, & Duarte, & Gingell, 2007).

Embarrassment.

A more generic factor commonly cited by patients for not discussing sexual concerns with their doctors is a sense of overarching embarrassment and discomfort (Ansong, et al., 1998; Moreira, et al., 2005; Porst, et al., 2006). Having a sexual dysfunction paradoxically appears to make it more difficult to discuss sexual concerns. In one study, men with PE reported feeling less comfortable discussing sensitive issues with their doctor than men without PE (68.6% vs. 75.6%) (Porst, et al., 2006). In an attempt to circumvent initial embarrassment of reporting sexual problems to physicians, Berner, et al., (2008) sent written information about erectile dysfunction and follow-up questionnaires to 1,392 (1,188 reported having ED). As a result of the written information material, 89.4% of the men took some action. Of these men, 64.7% decided to talk to

their partner, 72.7% to a physician, and 11.1% to another specialist, i.e., psychologist or counseling center. Over one third reported receiving some kind of treatment from their physician. It would appear that, although embarrassment in discussing sexual concerns with a physician prevents many from reporting, there may be feasible ways to encourage patients to seek help.

Physicians' Role

Physicians share in the responsibility of perpetuating the silence on sexual concerns, as there appears to be a mutual reluctance on the part of both health care professionals and patients to initiate discussions about sex (Lindau, et al., 2007). One study looked at barriers to treatment seeking for sexual problems with older people and found that a good relationship with their general practitioner and satisfaction with past consultations were important for seeking treatment (Gott & Hinchliff, 2003). Other factors included the physicians' gender or age and their perceived attitude towards later life sexuality, attributions of sexual problems to 'normal aging,' shame/ embarrassment and fear, perceiving sexual problems as 'not serious,' and lack of knowledge about appropriate services.

By and large, there is ample evidence to indicate that many doctors may not be asking patients about their sexual health. One study found that very few participants had been asked by a doctor about possible sexual difficulties during a routine visit in the past 3 years (5.9% of men and 6.5% of women in Spain; 3.7% of men and 4.2% of women in the United Kingdom) (Moreira, et al., 2005). This is concerning given that it has also been shown that individuals who had been asked about possible sexual difficulties during

a routine visit in the past 3 years were significantly more likely to seek medical help for sexual problems (Brock, et al., 2006; Moreira, et al., 2006).

When surveyed, most patients report that they feel it is the physician's responsibility to inquire about sexual symptoms. In a study aimed at men's expectations of primary care physicians in treating sexual health concerns, 65% said they depended on the physician to initiate the discussion (Metz & Seifert, 1990). More than one-half (51.6%) of men and 39.5% of women in another sample thought that a doctor should routinely ask patients about their sexual functioning (Moreira, et al., 2005). About a third (36.9% of men and 29.2% of women) of all respondents in a study conducted in the UK thought that the doctor should routinely ask patients about their sexual function and very few of the participants reported having been asked (Moreira, et al., 2007). Porst, et al., (2006) found that men with PE believed that physicians should inquire about the sexual health of their patients during routine visits to create a comfortable reporting environment. In a study of a sample of minority women aged 40 to 80, 43% of those with sexual problems (108) indicated they would like to discuss their problems with their clinician (Sadovsky, et al., 2006). However, the way a clinician asks may also be crucial in determining whether patients report on their sex lives. In this same study, participants were asked whether they preferred a more direct inquiry type such as, "Do you have a problem during sex," or a ubiquity-style question such as, "Many women with diabetes have sexual problems, how about you?" More women preferred the ubiquity-style probe to initiate a discussion of problems with sex, suggesting that patients become more comfortable about answering a sexual problem question once the universality of various sexual experiences are stated.

Doctors themselves may be uncomfortable talking about sexual issues. Nazareth, et al. (2003) reviewed practice records on consultation rates and entries about sexual health over two years in 1080 patient files. They found that, although up to 30% of individuals reported seeking sexual advice from their doctor, only 3-4% had an entry in their charts relating to sexual difficulties. Doctors may be reluctant to record sensitive material and so records do not accurately reflect involvement. Wiggins, et al., (2007) asked 35 physicians how comfortable they were taking sexual histories and almost all responded with “very” or “somewhat.” However, only 49% indicated that they make a point of obtaining a past sexual history more than half of the time. When queried as to whether they felt they had adequate time to discuss their patients’ sexual issues, 80% reported they did not. Interestingly, there appears to be a sex difference as 85% of male and 73% of female physicians reported they did not have enough time to discuss sexual issues.

It is difficult to blame the doctors, per se, since most residency training programs do not include formal training aimed at sexuality assessment, diagnosis, and therapies (Wiggins, et al., 2007). Some experts recommend physicians receive additional training, provide patients with information, and expand the role of nurses in this regard. However, similar factors appear to impact the provision of sexual health care (SHC) by nurses. Gamel, Hengeveld, Davis and van der Tweel (1995) reported that in a sample of Dutch nurses, SHC was rarely provided, although they indicated that sexuality issues are a focus for nursing care in the Netherlands. Out of a list of 24 SHC-related behaviors, nurses in this study reported adequate and/or more than adequate knowledge for only 14 of them.

Summary

The difficulty in reporting symptoms of and seeking treatment for a sexual dysfunction appears to lie in the discomfort and embarrassment associated with having a sexual problem. Attitudes and beliefs regarding sexual concerns also appear to influence whether or not individuals consult a physician. The patient's relationship with their physician seems to play a key role, as patients often expect the doctor to initiate discussion regarding their sex lives. Faced with the discomfort of sharing intimate details about their sexual health, many individuals seek counsel from informal sources.

This combination of factors interfering with reporting and seeking treatment is especially disconcerting for women with dyspareunia, since these women indicate hesitancy about seeking even informal sources for help (Donaldson & Meana, 2011). Considering that dyspareunia and vaginismus are the only sexual dysfunctions involving pain, one might expect that this sexual dysfunction would have higher reporting rates than others. After all, pain normally signals tissue damage and one would think that dyspareunia would quicker lead women to a doctor than low sexual desire. We do not have comparative figures on reporting across sexual dysfunctions, but the overall picture that emerges is that inhibition about matters of sexuality overpowers the impulse to seek help for a pain problem. In addition, the literature suggests that women may also be more reluctant to report out of a concern of being pathologized. The result is a set of conditions that inhibit treatment seeking for the very common and distressing problem of dyspareunia.

Summary and Aims of the Study

In comparison to other women's health problems, there is a dearth of research into the health beliefs, help seeking attitudes and treatment barriers of women with dyspareunia. Our qualitative foray into such questions indicated that young women who start to experience pain with intercourse early in their sexual lives face a confusing situation and significant obstacles to health provider consultation (Donaldson & Meana, 2011). This is concerning as there is theoretical support for the contention that the longer the problem goes unaddressed, the more difficult it may be to resolve (a classical conditioning paradigm whereby sexual activity becomes associated with pain). The Health Belief Model (Rosenstock, 1966) has been helpful in the investigation of factors that may interfere with treatment seeking for a variety of conditions for which early detection is important to treatment outcomes (e.g., breast cancer, cervical cancer). However, its usefulness in the case of dyspareunia is limited by a number of factors that differentiate dyspareunia from other more heavily researched women's health conditions. First, dyspareunia is not a hidden condition requiring detection via special tests: it is really the woman who is responsible for detection once she identifies recurring pain. Second, unlike in the case of breast cancer, women have little knowledge or exposure to information about painful intercourse and, thus, are perplexed about what to do once they realize they have the problem. Finally, dyspareunia is a women's health problem that involves sexuality and thus it is susceptible to all of the socio-cultural inhibitions and stigma associated with sex. It is thus likely that the help-seeking attitudes and treatment barriers for dyspareunia may be unique, or at the very least, specific to sexual disorders. With the

exception of our qualitative investigation, this question has yet to be empirically investigated.

Our main aim in this study was to investigate treatment-seeking barriers in dyspareunia, as well as cognitive and emotional styles associated with these barriers. Because there was no dyspareunia relevant measure of treatment-seeking influences, we first sought to construct such a measure. The construction of the measure was guided by 1) treatment barriers mentioned specifically by participants in the Donaldson and Meana (2011) qualitative study; 2) rationally derived items based on the clinical and research experience of the investigators and colleagues; and 3) an attempt to adapt these items to the structure provided by the Barriers to Help-Seeking Scale (Mansfield, Addis, & Courtenay, 2005). This measure was then factor analyzed on the combined sample consisting of sexually active women with dyspareunia, sexually active women without dyspareunia, and those who had yet to have sex. This study also explored the relationships between treatment-seeking barriers as endorsed on this measure and psychological predispositions that have been theoretically and empirically linked to treatment-seeking behavior; health anxiety, somatosensory amplification, pain catastrophization, and negative affect.

The construction of a new measure does not lend itself easily to the formulation of hypotheses. Based on the existing literature, however, we ventured hypotheses related to potential factors and to the validity and reliability of the new measure. Analyses relating to factor structure were conducted on the entire sample (dyspareunia, sexually active no-pain, and not sexually active). Group differences on the Sexual Health Treatment Barriers Scale – Dyspareunia Exploratory Version (SHTBS-DyspEXPV) total score were

accounted for via the mean deviation of SHTBS-DyspEXPV item scores prior to the principle component analysis.

Hypothesis #1:

The Sexual Health Treatment Barriers Scale – Dyspareunia Exploratory Version (SHTBS-DyspEXPV) will yield a factor structure consisting of at most seven factors representing barriers as follows; 1) minimizing the problem, 2) distrust of health professionals, 3) feelings of shame, 4) fear of severity, 5) desire to maintain privacy, 6) problems identifying whether there is problem, and 7) lack of resources.

Hypothesis #2:

The SHTBS-Dysp (version in which items with inadequate factors loadings are deleted) will demonstrate adequate internal consistency.

Hypothesis #3:

The SHTBS-Dysp will demonstrate adequate test-retest reliability.

Hypothesis #4:

SHTBS-Dysp total score will correlate negatively with health anxiety.

Hypothesis #5:

SHTBS-Dysp total score will correlate negatively with somatosensory amplification.

Hypothesis #6:

SHTBS-Dysp scores will correlate negatively with negative affect.

Hypothesis #7:

For participants reporting dyspareunia, SHTBS-Dysp scores will correlate negatively with pain catastrophization.

Hypothesis #8:

For participants reporting dyspareunia, SHBTS scores will correlate negatively with actual attempts at seeking treatment.

CHAPTER 3

METHODOLOGY

The study consisted of three phases. Phase 1 involved the rational construction of a measure of potential help-seeking barriers for dyspareunia and subsequent refinement of that measure; Phase 2 consisted of 1) the empirical investigation of the measure's properties using exploratory principal component analysis in a sample of college women, and 2) the investigation of the validity of our new measure to the extent that it correlated in expected ways with theoretically associated constructs; in Phase 3 we assessed the test-retest reliability of our new measure with a smaller second sample of women.

Phase 1 - Construction of a Measure of Dyspareunia Treatment-Seeking Barriers

Broadly fashioned after Mansfield, et al.'s (2005) *Barriers of Help Seeking Scale* (BHSS), this measure presents participants with a hypothetical health scenario and then presents them with a list of possible barriers to their help-seeking. More specifically, in our measure the hypothetical scenario was the experience of pain with intercourse as follows: *Imagine that you begin to experience pain in your genitals or pelvic area while having sexual intercourse. The pain prevents you from enjoying sex and sometimes it hurts so much that you want to or have to stop having sex. You notice that this is now happening regularly whenever you have intercourse. You consider seeking help from a health professional. Below are several reasons or attitudes that make you hesitate to seek help. Please read each statement and decide how true it is for you.* The use of hypothetical scenarios is a well-accepted measurement technique designed to examine people's decision-making for treatment options (Corso, Hammitt, Graham, Dicker, & Goldie, 2002; Crawford, Meana, Stewart, & Cheung, 2000; Fagerlin, Wang & Ubel,

2005). One of the assumptions of this hypothetical scenario technique is that it would also capture individuals for whom the scenario was not hypothetical at all.

Item generation was then conducted via three methods and then revised: 1) a review of the literature on help-seeking influences; 2) a more specific review of the treatment seeking barriers outlined by participants in Donaldson and Meana's (2011) qualitative study of young women with dyspareunia; 3) rational item generation among the two investigators and a group of other sexuality researchers; and then 4) comprehension, readability and redundancy review of initial items by a group of graduate and undergraduate students. Items were edited to improve comprehension and readability and redundancies were deleted. Items generated fell into seven hypothesized categories: 1) minimizing the problem, 2) distrust of health professionals, 3) feelings of shame, 4) fear of severity, 5) desire to maintain privacy, 6) difficulty identifying symptoms as a health problem, and 7) lack of resources (Table A1). The specific items in the measure were designed and worded to be theoretically applicable to any sexual health problem; however, the scenario provided in this study was dyspareunia-specific. The possibility remains that this measure would be valid for any sexual health problem, as long as the hypothetical scenario that precedes the items is adapted to the sexual health problem in question. Once item generation and review was completed, the measure was named the Sexual Health Treatment Barriers Scale-Dyspareunia-Exploratory Version (SHTBS-DyspEXPV) (see Exhibit A1).

Phase 2 – Investigation of SHTBS-DyspEXPV Properties and Associated Constructs

Participants

Tabachnick and Fidell (2007) state that a sample size of 300 is “comfortable” when conducting a factor analysis, and Comrey and Lee (1992) indicate that 500 is very good and 1000 is excellent. By these standards, our sample contained an adequate number of participants. A total of 1,246 women started the protocol in Survey Monkey, here defined as having at least indicated “Proceed” on the informed consent. Data was only considered from those participants who completed the survey packet, as indicated by their closing of the browser window. From the completed surveys, analyses were first limited only to those who indicated their age to be between 18 and 29. One hundred and forty-two participants (11.40%) were excluded based upon their failure to meet this criterion. Data analyses were further limited to participants who did not have missing data on more than 30% of applicable items on any one of the measures used in this study. Sixty participants were excluded because they had missing data on more than 30% of applicable items on any one of the measures. An additional ten participants were excluded due to conflicting information related to their sexual functioning, i.e., participants indicating they had yet to have sexual intercourse AND also that they experience pain with sexual intercourse.

The final sample on which analyses were conducted was thus 1034. Table A2 presents the demographic characteristics of the final sample of 1034 women. Participants ranged in age from 18 to 29 ($M = 20.08$; $SD = 2.63$) and all major ethnic minorities were represented. In terms of relationship status, approximately 50% of the sample was partnered (steady boyfriend, married or cohabiting) but only a small minority had children (4.8%). Almost 80% had already engaged in sexual intercourse, with the mean

age of first intercourse being 16.71. The Female Sexual Function Index (FSFI: Rosen, et al., 2000; Appendix B) was utilized to ascertain which women experienced symptoms of dyspareunia. The last three items on the FSFI inquire whether participants experience discomfort or pain during and/or after vaginal penetration, as well as the degree of discomfort. Participants indicating that 1) they experienced pain with intercourse approximately half of the time or more, and 2) that the pain was moderate or more severe, were considered to have dyspareunia. Thus, the three groups of interest to this study consisted of 728 sexually active women without dyspareunia, 102 women with dyspareunia, and 204 women who had not yet become sexually active.

Materials

Socio-Demographic Questionnaire.

A brief sociodemographic questionnaire inquiring about age, ethnicity, relationship status, parity was administered. The questionnaire contained a separate section for those reporting pain with intercourse to choose descriptions of the pain they experienced and to indicate whether they had sought treatment for their pain and what types of treatment (see Appendix C).

Female Sexual Functioning Inventory (FSFI: Rosen, et al., 2000; Appendix B).

The FSFI was used to identify women with dyspareunia. This instrument is composed of 19 questions pertaining to six domains: desire (items 1 and 2), arousal (items 3 through 6), lubrication (items 7 through 10), orgasm (items 11 through 13), satisfaction (items 14 through 16) and pain (items 17 through 19). Each item represents a separate component of the domain (i.e., frequency, difficulty, and satisfaction). Scores for the full scale range from 2 to 36 with higher scores indicating higher levels of sexual function. The items

addressing sexual pain query the frequency of discomfort or pain during vaginal penetration, frequency of discomfort or pain following vaginal penetration, and the intensity of pain during or following vaginal penetration during the past four weeks. Response options on the frequency of pain questions are: Did not attempt intercourse, Almost always or always, Most times (more than half the time), Sometimes (about half the time), A few times (less than half the time), Almost never or never. For the item regarding intensity of pain, response options are: Did not attempt intercourse, Very high, High, Moderate, Low, Very low or none at all. The range of scores for the domain of pain is 0 to 6. Participants were assumed to have dyspareunia if they responded with “Sometimes (about half the time)” or above to items 17 and/or 18 and “Moderate” to item 19. The FSFI has been found to have high test-retest reliability ($r = .79 - .86$), high internal consistency (Cronbach’s alpha values of 0.82 and higher) and acceptable discriminate validity, as demonstrated by significant difference between scores of women with female sexual arousal disorder, female orgasmic disorder, hypoactive sexual desire disorder, and control groups (Meston, 2003; Rosen, et al., 2000). The overall internal consistency alpha in this sample was .98.

Sexual Health Treatment Barriers Scale – Dyspareunia - Exploratory Version (SHTBS –DyspEXPV; Exhibit A1).

The SHTBS-Dysp EXPV consisted of 58 items generated as described in Phase 1 of the study. Items addressed seven categories of potential barriers: Minimizing the Problem – 10 items; Distrust of Health Professionals – 8 items; Shame – 9 items; Fear of Severity/Impact – 7 items; Privacy – 7 items; Problem Identity Confusion – 9 items; and Lack of Resources – 8 items. The measure instructs respondents to imagine they begin to experience pain with intercourse and then indicate the extent to which each item would

be or is true for them. Each item represents a treatment barrier, but they are not identified as such for the participants. Responses are given on a 5-point Likert scale ranging from “not at all true” to “very true,” higher scores indicating the reason to be more of a barrier to their treatment seeking. Items were randomized for presentation. The possible range of scores for the SHTBS-DyspEXPV is 58 to 290. After responding to the list of barriers, the measure then instructs participants to indicate how likely they would be to seek help for this problem from eight different sources, although the answers to these questions are not part of the measure score.

Somatosensory Amplification Scale (SSAS; Barsky, Wyshak, & Klerman, 1990; Appendix D).

The SSAS is composed of ten items assessing the degree to which an individual experiences ordinary bodily sensations as intense and disturbing. Individuals are asked to respond using a Likert-type scale in which 1 is labeled “not at all true,” 2 “a little bit true,” 3 “moderately true,” 4 “quite a bit true,” and 5 “extremely true.” Higher scores indicate higher levels of distress regarding somatic symptoms. The possible range of scores is 10 to 50. The SSAS has been found to have good reliability and validity with test-retest coefficients of .79, Cronbach alphas ranging in the low .80’s (Barsky, et al., 1990; Sayar, Kirmayer, & Taillefer, 2003) and the ability to distinguish hypochondriachal patients as well as those who make frequent use of medical services from other patients (Barsky, et al., 1990; Barsky & Wyshak, 1990). Internal consistency for the measure with this sample was moderate with Cronbach alpha = .74.

Health Anxiety Questionnaire (HAQ; Lucock & Morley, 1996; Appendix E).

The HAQ was designed to identify individuals with high concern about their health. The 21 items on the HAQ focus on health worry and preoccupation, fear of illness and

death, reassurance-seeking behavior and interference with activities. Individuals are asked to respond using a Likert-type scale in which 0 is labeled “not at all or rarely,” 1 “sometimes,” 2 “often,” and 3 “most of the time.” Higher scores indicate more worry about health. The possible range of scores is 0 to 63. The HAQ has been found to have high reliability with test-retest coefficients ranging between .87 to .95 and high internal consistency of .92 (Lucock & Morley, 1996). The scale also has adequate discriminant validity in distinguishing clinical and non-clinical populations (Lucock & Morley, 1996). Internal consistency for the measure with this sample was good with Cronbach alpha = .92.

Pain Catastrophizing Scale (PCS; Sullivan, et al., 1995; Appendix F).

The PCS was constructed as a self-report measure that provides an index of catastrophization in clinical and nonclinical populations and is composed of 13 items, which fall in one of three dimensions: rumination, magnification, or helplessness. Individuals are asked to reflect on past painful experiences and then indicate the degree to which they have experienced the thoughts and feelings described in the 13 items. Response options are on a 5-point scale from 0 (“not at all”) to 4 (“all the time”) with higher scores indicating greater pain catastrophization. The possible range of scores is 0 to 52. The PCS has been demonstrated to be reliable (Cronbach’s alpha = .87). The PCS has also been found to have criterion-related, concurrent and discriminatory validity (Osman, Barrios, Gutierrez, Kopper, Merrifield, & Grittmann, 2000). In this sample, internal consistency of the measure was good with a Cronbach alpha of .94.

Mental Health Inventory (MHI; Veit & Ware, 1983; Appendix G).

The MHI is a 38-item measure of psychological distress and well-being for use in general populations. Items address the following constructs: psychological distress, well-being, anxiety, depression, emotional ties, general positive affect and loss of behavioral emotional control. Individuals are asked questions related to how they have felt in the past month (i.e, Have you felt calm and peaceful? Were you able to relax without difficulty?). Participants respond to each question by indicating how much of the time they have experienced these feelings in the last month on a 6-point Likert scale ranging from “all of the time” (scored as 6) to “none of the time” (scored as 0) for items related to psychological distress. Items for psychological well-being are reverse scored such that higher scores indicate greater mental health. The possible range of scores is 0 to 100. The MHI has been found to have good internal reliability (ranging from .83-.91). Stability coefficients in the .56 to .64 range indicate stable reliable variance over a 1-year interval. The MHI has shown to have good discriminant validity in distinguishing those with and without mental disorders (Weinstein, et al., 1989). In this sample the internal consistency of the measure was good with a Cronbach alpha of .85.

Procedure

Participants were recruited through the Psychology 101 Subject Pool. Potential participants were given a link and password to access the consent form and study questionnaires on computers using Survey Monkey software, which records all data points entered by participants. Upon entering the link into a browser and providing the required password, participants were presented with the informed consent. Upon agreeing to participate (by clicking “Proceed”) participants were presented with the following

measures: the Socio-demographic Questionnaire, the SHTBS-DyspEXP, the FSFI, the SSAS, the HAQ, the PCS, and the MHI. Upon completion of the survey, participants were prompted to close the browser window.

Phase 3 – Test/Re-test Reliability

Participants

In order to evaluate test-retest reliability, 24 women were recruited from the Psychology 101 Subject Pool. Participants ranged in age from 18 to 29 ($M = 20.08$; $SD = 2.52$) with 16.7% identifying as being African American, 16.7% Asian American, 25% EuroAmerican (Caucasian), 20.8% Hispanic American, and 16.7% Pacific Islander American. In terms of relationship status, approximately 50% of the sample was partnered (steady boyfriend, married or cohabiting). All were nulliparous. The majority (83.3%) had already engaged in sexual intercourse, with the mean age of first intercourse being 16.35. Questions from the pain domain of The Female Sexual Function Index (FSFI: Rosen, et al., 2000) was utilized to ascertain which women experienced symptoms of dyspareunia. Only two woman indicated having symptoms of dyspareunia (Table A3).

Materials for Phase 3

Socio-Demographic Questionnaire.

An abridged version of the socio-demographic questionnaire was administered in Phase 2. It consisted of items 1 through 6 of the original version (see Appendix H).

Sexual Health Treatment-Seeking Barriers Scale-Dysp (SHTBS-Dysp; Exhibit A2).

The SHTBS-Dysp contains 28 Likert-type items that assess Minimization, Shame, and Fear of Severity. This measure is the principle-component-analyzed and reduced version of the SHTBS-DyspEXPV. Details of how the 58-item SHTBS-DyspEXPV

became the 28-item SHTBS-Dysp are described in the Results section. Similar to the 58-item version, this measure instructs respondents to imagine they begin to experience pain with sexual intercourse and to then indicate the extent to which each item would be true for them. Items fall into three categories of potential treatment barriers: Minimization – 10 items; Shame – 10 items; and Fear of Severity – 8 items. The potential treatment barriers are described as reasons for hesitating to seek help and are randomly presented. Responses are given on a 5-point Likert scale ranging from 1 “not at all true” to 5 “very true,” with higher scores indicating that the participant has or would imagine more barriers to treatment seeking. The range of possible scores is 28 to 140. The SHTBS-Dysp demonstrated good internal consistency with this sample (Cronbach’s alpha = 0.94).

Procedure

Participants were recruited through the Psychology Subject Pool at the University of Nevada, Las Vegas. At Time 1, participants arrived at the classroom and were presented with an informed consent. Upon signing the informed consent and orally indicating to the investigator the desire to participate in the study, participants were presented with the socio-demographic questionnaire, the SHTBS-Dysp and a manila envelope. Upon completion of the two questionnaires, participants were asked to insert the questionnaires in the manila envelope to ensure privacy and to schedule a time to return and complete the second administration of the SHTBS-Dysp approximately two weeks later. At Time 2, participants arrived at the classroom and were presented with an informed consent. Upon signing the informed consent and orally indicating to the investigator the desire to participate in the study, participants were presented the SHTBS-Dysp and a manila

envelope. When they completed the questionnaire, they inserted it in the manila envelope and handed it to the investigator.

CHAPTER 4

RESULTS

Phase 1 – Construction of Sexual Health Treatment Barriers Scale – Dyspareunia (SHTBS-DyspEXPV)

Phase 1 of this study entailed the construction of the Sexual Health Treatment Barriers Scale–Dyspareunia–Exploratory Version (SHTBS-DyspEXP), the details of which can be found in the Method section (Exhibit A1).

Phase 2 – Investigation of SHTBS-DyspEXPV Properties & Validity of the SHTBS-Dysp

Overview

To assess the factor structure of the SHTBS-DyspEXPV, a principle components analysis (PCA: Kaiser, 1970) was performed including all fifty-eight questionnaire items relating to potential health seeking barriers (the last eight items on the SHTBS did not pertain to treatment barriers but rather to preferences for a variety of potential treatment or assistance sources). To address missing data, scores were first imputed using the expectation maximization algorithm model. Before conducting the PCA, scores were also mean deviated to account for the differences between the three groups (sexually active with no pain, sexually active with pain, not sexually active) in our combined sample. A number of strategies to determine the original factor solution were considered. After examining several factor solutions, a four-factor solution was determined to be optimal and an Oblique rotation (Promax; Kappa=2.5) was applied. However, considering that the fourth factor had only 3 items and that these items pertained to general help-seeking barriers that were not specific to sexual health problems (e.g., lack of insurance, no regular primary care provider, no time to go see doctor), we chose to retain only three of

the four factors. This final version of the questionnaire was named the Sexual Health Treatment Barriers Scale – Dyspareunia (SHTBS-Dysp) (see Exhibit A2). Detailed information regarding the analyses follows.

Missing Data

Missing scores were imputed using the expectation maximization algorithm model for any questionnaire with less than 30 percent missing data (Tabachnick & Fidell, 2007). For participants with less than 30% missing data on any measure, we utilized the Missing Values Analysis module for SPSS to conduct imputations using the expectation maximization algorithm model (Tabachnick & Fidell, 2007). Of the final sample of 1034 participants with less than 30% missing data on any one measure, 872 participants had less than 5% missing on any of the measures (748 had no missing data points at all), 80 had 5-10% missing, 36 had between 11-20% missing and four had between 21-30% missing data on any one measure.

Investigation of Group Differences Prior to PCA

Because we collected data from three groups of women (women who had not yet become sexually active, sexually active women who did not experience pain with intercourse, and sexually active women who reported symptoms of dyspareunia), we assessed 1) group differences in three separate variance-covariance matrices, and 2) group mean differences on the items. The Bartlett-Box procedure was used to determine if there was a significant difference between the three variance-covariance matrices. Results indicated that the variance-covariance matrices were significantly different (Box's $M = 5141.69$, $p < .001$), suggesting that PCA should be conducted separately for each group of women. However, after examining preliminary PCA's for each of the

groups and finding similar factor structure and item loadings for each, we decided to explore the underlying factor structure of the SHTBS-DyspEXPV with the combined sample, taking the appropriate measures as follows. A test of Between-Subject Effects determined there was a significant difference between the group of women with dyspareunia and women who were sexually active and did not experience pain, $F(1,830) = 13.49, p < .001$. There was also a significant difference between women who were sexually active and did not experience pain and those who were not yet sexually active, $F(1, 932) = 6.05, p < .05$. Consequently, the data from the three groups of women was mean-deviated before a PCA was conducted with the combined sample.

Item Descriptive Statistics and Multicollinearity

Item descriptive statistics (means and standard deviations) were conducted to identify and drop items whose means were on the extreme and near 0, exhibited little variance, and/or had a near-zero or negative-item correlation with the total score (see Table A4). Means for all items varied from 1.75 to 3.25. Two items with low variance (below 1) were dropped because low item variance is associated with decreased internal consistency (Wester, Willse & Davis, 2008) and has the potential to negatively impact factor structure (Ekkekakis & Petruzzello, 2000) (in SHTBS-DyspEXPV: item 16. *Would not want the sort of help available* and item 28. *Would not trust health professionals to help with it*). Next, item-total correlations were computed. There were no items that had negative item-total correlation or item-total correlations of $< .1$. To address issues of multicollinearity, we examined inter-item correlations equal to or greater than $.7$, as recommended by Tabachnick and Fidell (2007). Out of the ten pairs that met that criterion, we discarded those items in each pair with the lowest item-total correlation.

This resulted in the dropping of 10 additional items from the SHTBS-DyspEXPV as follows: item 1. *Believe that the problem is temporary*; item 8. *Delay getting treatment because I do not have health insurance*; item 9. *Believe that problems like this are part of having sex*; item 27. *Believe this problem does not require treatment*; item 35. *Not want a health professional to examine my private parts (genitalia)*; item 37. *Have difficulty fitting an appointment with a health professional into my busy schedule*; item 45. *Worry that the health professional would think that I am abnormal*; item 49. *Be concerned that I could not afford treatment*; item 51. *Believe that individuals can fix this type of problem on their own and*; item 57. *Be concerned about there being a record (e.g., medical record or insurance record) of my seeking help for this type of problem*. This process thus resulted in the reduction of the measure from 58 items to 46 items.

Determining the number of factors

To determine the number and nature of the factors underlying the SHTBS-DyspEXPV, we conducted a PCA with multiple factors. Number of factors to be retained for rotations was guided by a consideration of three criteria (Kaiser-Guttman rule, Scree Test and Parallel Analysis). A description of each criterion considered follows.

First, the Kaiser-Guttman rule dictates that the number of factors is determined by counting the number of eigenvalues > 1.0 . This criteria is based on the rationale that each factor that has an eigenvalue > 1.0 also has a positive value for coefficient alpha and thus accounts for at least as much variance as one of the original factors. Second, with the scree test (Cattell, 1966) a scatterplot is obtained through SPSS with the number of the factors on the x-axis and the value of the eigenvalue on the y-axis. A line is drawn through the dots, beginning at the bottom right side of the graph and the first dot above

the line indicates the number of factors. Finally, parallel analysis (Cota, Longman, Holden, & Fekken, 1993; Horn, 1965) involves comparing obtained eigenvalues against randomly generated datasets that have the same number of variables and participants (Thompson, 2004).

After employing the above criteria to determine the number of factors, it was observed that the Kaiser-Guttman criterion suggested the retention of seven factors, while both the scree plot and parallel analysis suggested the retention of five factors. Loadings with structure coefficients of $\geq .40$ were considered to be salient so as to retain only those loadings that were both statistically ($p < .05$) and practically significant (Stevens, 2002). We had originally hypothesized seven factors before administration of our measure; however, after examining statistical suitability, we found that several factors were considered trivial because they did not have a unique set of defining variables (Gorsuch, 1983). Thus, we ran multiple factor solutions to determine which had maximum interpretive potential. The four-factor solution maximized simple structure and was the most interpretable as it had the greatest number of unique defining variables on each factor. This 4-factor solution was initially retained.

To determine the optimal rotation, three orthogonal rotations (Varimax, Quartimax, and Equamax) and four oblique rotations (Direct Oblimin $\{\Delta = 0; \Delta = -1\}$ and Promax $\{\text{Kappa} = 2.5; \text{Kappa} = 3.5\}$) were run. We judged the quality of each rotation based on how well the rotated factor pattern matrix matched the criterion of “simple structure.” Simple structure was defined as having few complex variables (salient coefficients), having a high number of hyperplanar coefficients (this indicates that each factor is measuring only some specific content), and lower correlations between factors (high

correlations obscure the difference between factors). For each rotation, the number of hyperplanar pattern matrix coefficients and the number of complex items were counted. For the oblique rotations, the correlations among the factors were summarized also. An oblique rotation (Promax, Kappa=2.5) was found to be optimal and resulted in one complex item and 77 hyperplanar pattern matrix coefficients (see Table A5).

The resulting model retained 35 items, explained 49.48% of the variance after rotation and reflected moderate interfactor correlations (see Table A6). The first factor (internal consistency: $\alpha = .89$) consisted of items we interpreted as and titled Minimization. The second factor ($\alpha = .91$) consisted of items we interpreted as and titled Shame. The third factor ($\alpha = .86$) consisted of items we interpreted as and titled Fear of Severity. The fourth factor ($\alpha = .84$) consisted of items we interpreted as and titled Structural Problems (non-sexuality related reasons for not seeking health care [e.g. can't afford to see a doctor]). However, when internal consistency was measured for the fourth factor, the alpha-if-item-deleted analysis indicated the necessity the removal of one item (see Table A7). After removal of this item, the factor's alpha was .86. Considering the fact that Structural Problems related to general healthcare obstacles (e.g., not having a regular general medical doctor, not having sufficient health insurance coverage, etc.), which are not specific to sex-related problems (the main aim of our measure), we decided to remove the fourth factor from further analysis. This yielded a final scale with 28 items and an overall internal consistency of .94. The standard error of measurement was also computed ($SEM = 4.92$).

Interpretation of Factors (SHTBS-Dysp Scales)

The resulting 3-subscale measure was titled the Sexual Health Treatment Barriers Scale -Dyspareunia (SHTBS-Dysp: see Exhibit A2) and consisted of 28 items. A description of each of the subscales follows.

The first subscale consisted of 10 items we interpreted to be related to Minimization which corresponded to our first hypothesized dimension: Minimizing the Problem. Minimization was defined as dismissing the significance of the symptoms (pain) sufficiently to deem treatment unnecessary (e.g., *think that this is not a big enough problem for a consultation with a health professional; consider this to be a minor problem that does not require treatment*). Reasons for minimizing included believing that the pain is simply something to endure (e.g., *believe that problems like this are just something you deal with*) or not severe enough to warrant taking any action requiring a health professional (e.g., *prefer to wait until I was sure the problem was serious enough to seek assistance*) (Table A8).

The second subscale consisted of 10 items assessing items that we interpreted as being related to Shame. Shame was defined as feelings associated with the possible stigma of having a sexual problem (e.g., *find it embarrassing to disclose to a health professional that I was having a problem with sex*), issues surrounding maintaining one's privacy (e.g., *be afraid the health professional might tell others about my problem*), and concern about being negatively evaluated by others (e.g., *worry that the health professional would judge me negatively*). This subscale is related to our third hypothesized dimension: Feelings of Shame (Table A8).

The third subscale consisted of eight items assessing items that we interpreted as being related to the Fear of Severity. This was defined as a concern that the symptom of pain could be indicative of a severe health problem (e.g., *worry that the health professional might find I had a serious health problem; worry that I would be told that I have a sexually transmitted infection*). In addition to worry about a foreboding diagnosis, the subscale also included the consideration of the potential negative consequences of the symptom (e.g., *be afraid to find out that this problem may impact my ability to have children in the future; be afraid that the treatment for this would affect my relationship with my partner*). This subscale also encompassed apprehension related to the potential treatment for the underlying problem (e.g., *be afraid that they might tell me there is no treatment or cure for it*) and the possibility that a treatment may not even exist (e.g., *be afraid that they might tell me there is no treatment or cure for it*). This subscale was related to our fourth hypothesized potential barrier dimension: Fear of Severity (Table A8).

A series of bivariate correlations (see Table A9) were conducted to examine the relationship between the SHTBS-Dysp total score and its three subscales. Results indicated a significant ($p < .005$) positive correlation between the SHTBS-Dysp Total Score and Minimization ($r = .80$), Shame ($r = .89$), and Fear of Severity ($r = .82$). Significant relationships were identified between the subscales of Shame and Minimization ($r = .56$), Shame and Fear of Severity ($r = .66$), and Minimization and Fear of Severity ($r = .44$).

Convergent Validity

A series of bivariate correlations were computed between the SHTBS-Dysp Total Score and subscale (Minimization, Shame, Fear of Severity) scores, and the study measures designed to test convergent validity: Somatosensory Amplification Scale (SSAS) (Table A9), Health Anxiety Questionnaire (HAQ) (Table A10), Pain Catastrophizing Scale (PCS) (Table A11), and Mental Health Inventory (MHI) (Table A12). The SHTSB-Dysp total score was significantly and positively related to the total score of all of our convergent validity measures: SSAS ($r = .14$, $p < .005$), HAQ ($r = .27$, $p < .001$), PCS ($r = .27$, $p < .002$), and MHI ($r = .27$, $p < .001$). Each of the subscales of the SHTBS-Dysp also correlated significantly and positively with the total score of each of the convergent validity measures, as illustrated in the aforementioned Tables A9-A12.

The subscales of the SHTBS-Dysp correlated significantly with subscales of the HAQ in both expected and paradoxical fashions. Minimization and Shame were positively associated with Worry and Health Preoccupation, Fear of Illness and Death, and Extent to Which Symptoms Interfere with the Person's Life. Neither the Minimization nor Shame subscales were associated with Reassurance-seeking Behavior. Fear of Severity was positively associated with all HAQ subscales except Extent to Which Symptoms Interfere with the Person's Life. Minimization, Shame, and Fear of Severity all correlated positively with the three PCS subscales; Rumination, Magnification, and Helplessness. Regarding the MHI, Minimization was positively associated with all MHI subscales, while Shame and Fear of Severity were positively associated with all MHI subscales except for Positive Affect.

To further explore the nature of the association between the SHTBS-Dysp and potentially associated constructs, the sample was divided into thirds in terms of their scores on each of the associated measures (SSAS, HAQ, PCS, & MHI). ANOVAs were conducted to compare SHTBS-Dysp scores among low scorers, medium scorers and high scorers for each convergent validity measure. No significant pattern of differences was found between the three groups for any one of the measures. Participants with lower scores on the measures endorsed fewer treatment seeking barriers and participants with higher scores endorsed more treatment barriers as the initial correlations indicated.

To test our hypothesis pertaining to the correlation between SHTBS-Dysp total score and self-reported attempts at seeking treatment in women with dyspareunia, a point biserial correlation was executed with the dyspareunia sample only. A statistically significant negative correlation was found between the SHTBS-Dysp total score and the number of times that participants with dyspareunia consulted with a health provider about this problem, ($r = -.21, p < .05$). Independent-samples t-tests were also conducted to compare SHTBS-Dysp total scores for women with dyspareunia who indicated they had reported their symptom to a health professional and those who had not. Results indicated that women who indicated having reported their symptoms to a health professional were less likely to endorse barriers than women who had not reported the problem. Significant differences were found in SHTBS-Dysp total score for those who had reported symptoms to a health professional ($M = 68.24, SD = 19.55$) and those who had not ($M = 78.74, SD = 17.52$); $t(102) = -2.73, p = .008$). Regarding the SHTBS-Dysp subscales, significant differences were found in scores on the Minimization subscale between reporters ($M = 25.43, SD = 6.84$) and non-reporters ($M = 29.23, SD = 7.63$); $t(102) = -2.44, p = .017$ and

on the Shame subscale between reporters ($M = 20.99$, $SD = 9.59$) and those who indicated they had not reported symptoms ($M = 25.09$, $SD = 8.89$); $t(102) = -2.13$, $p = .036$. The difference on the Fear of Severity subscale score between women who had reported symptoms ($M = 21.82$, $SD = 6.85$) and those who had not ($M = 24.42$, $SD = 6.64$) was not significant $t(102)$, $p = .07$.

Group Differences in SHTBS-Dysp Scores

As our sample consisted of women who were not sexually active, women who were sexually active but had no pain, and sexually active women with symptoms of dyspareunia, we explored group differences in treatment barriers. Table A13 presents the means and standard deviations in SHTBS-Dysp subscales and total score as a function of group membership. Separate analyses of variance (ANOVA) indicated significant group differences on the total SHTBS-Dysp score and all subscales, although effect sizes were very small (see Table A14). Post-hoc comparisons using the Scheffe' test indicated that on the Minimization subscale, women with dyspareunia scored higher than women who did not experience pain with sex ($p < .01$) or women who had not yet become sexually active ($p < .01$). On the Shame subscale, women with dyspareunia scored significantly higher than women who did not experience pain with intercourse ($p < .01$), while the latter scored significantly lower than women who had yet to be sexually active ($p < .01$). On the Fear of Severity subscale, women with dyspareunia did not differ from the other two groups, but sexually active women with no intercourse pain scored significantly lower than sexually inactive women ($p < .01$). In terms of the SHTSB-Dysp Total Score, women with dyspareunia scored significantly higher than sexually active women who did not experience pain ($p < .01$) (see Table A13).

Help-Seeking Sources.

In addition to investigating the properties and convergent validity of the SHTBS-Dysp, we also collected data on the most likely sources of help for women who might in the future or already have problems with painful intercourse. Participants were instructed to respond how likely they would be to seek help from a list of sources: sex therapist, psychologist, medical doctor, friend, sexual partner, relative, internet, and clergy member. Response options were on a 5-point Likert scale from 1 (“not at all likely”) to 5 (“very likely”). Table A15 presents the means and standard deviations for the entire sample in terms of the likelihood of seeking help from the list of sources provided. A medical doctor was considered the most likely source of help for this problem followed by the Internet, a sex partner, and a friend. Relatives, a sex therapist, a psychologist, and a clergy member found themselves at the bottom of the list in the order here presented. Table A16 presents the means and standard deviations of the likelihood of consulting with any of the afore-mentioned sources of help as a function of group membership. Separate analyses of variance (ANOVA) for each help-seeking source were conducted to assess group differences (see Table A17). Group differences were found for likelihood of seeking help from a psychologist, $F(2, 1017) = 5.07, p < .05$; a medical doctor, $F(2, 1017) = 4.68, p < .05$; and a relative $F(2, 1017) = 5.36, p < .05$, although all effect sizes were very small. Posthoc comparisons using the Scheffe’ test indicated that women with dyspareunia were more likely to seek help from a psychologist than women who did not report experiencing pain with intercourse ($p < .05$). Women with dyspareunia also reported being less likely to seek help from a medical doctor than women who did not experience pain with intercourse ($p < .01$) and women who were not yet sexually active

($p < .05$). Women who had yet to have sexual intercourse reported being more likely to seek help from a relative than those who were sexually active without pain ($p < .001$) and more likely than women with dyspareunia ($p < .05$). Finally, women who did not experience pain with intercourse indicated they would be more likely to seek help from the Internet than women who were not yet sexually active ($p < .05$) (see Table A16).

Phase 3 – Examining Test-retest Reliability

Test–retest stability was evaluated using intraclass correlation coefficients (ICCs). An intraclass correlation coefficient of $< .39$ indicates poor agreement, $.40$ indicates fair agreement, $.41–.60$ indicates moderate agreement, $.61–.80$ indicates good agreement and $> .80$ indicates excellent agreement (Bartko, 1996). The ICC for the SHTBS-Dysp subscales (*Minimization*: $r = .83$; *Shame*: $r = .86$; and *Fear of Severity*: $r = .80$) and the SHTBS-Dysp total score ($r = .84$) suggested excellent agreement.

CHAPTER 5

DISCUSSION

The purpose of this study was to explore barriers to treatment-seeking for dyspareunia in young women. In order to do so, we created a measure consisting of rationally derived items based on the general help-seeking literature, as well as items drawing on treatment barrier themes found in Donaldson and Meana's (2011) qualitative study of young women with dyspareunia. The structure of the measure was modeled on Mansfield, et al.'s (2005) general Barriers to Help-Seeking Scale (BHSC), which uses the hypothetical health problem scenario as a prompt. The measure was administered to three groups of young women: women currently experiencing painful intercourse, sexually active women who do not experience pain with intercourse, and women who have yet to become sexually active. The main statistical analyses were conducted on the combined sample, after within-group mean deviation of scores on the developed measure was applied. Exploratory principal component analysis of this measure yielded three psychometrically sound components (subscales): Minimization, Shame, and Fear of Severity. The resulting measure contained 28 items and was titled the Sexual Health Treatment Barrier Scale – Dyspareunia Version (SHTBS-Dysp).

The SHTBS-Dysp was found to be a psychometrically sound measure. After administration of the principle component analysis, this measure's components accounted for almost 50% of the variance after rotation. With regards to reliability, results indicated that the SHTSB-Dysp has good internal consistency among its items and demonstrated good test-retest reliability. In regards to convergent validity, the SHTBS-Dysp total and sub-scale scores correlated (in expected and unexpected ways) with all of the measures

administered: the Somatosensory Amplification Scale (SSAS), the Health Anxiety Questionnaire (HAQ), the Pain Catastrophization Scale (PCS), and the Mental Health Inventory (MHI). It also correlated with Self-reported attempts at treatment-seeking in women with dyspareunia. This indicates that the SHTBS may be a good predictor of actual behavior, although this was not directly tested in this study. Significant differences in treatments barriers between the three groups of women were evident, although the effect sizes of the differences were small. And, finally, participants indicated a distinct preference for sources of help-seeking, identifying medical doctors as the most preferred, followed by the Internet, sex-partners and friends. The following sections will describe and interpret the results in detail.

Treatment Barriers

Minimization

The Minimization component of the SHTBS-Dysp reflected the tendency to dismiss the significance of the hypothetical or real symptom of pain, so as to render help-seeking unnecessary. This barrier included beliefs that this type of pain is a natural part of sexuality which women just have to endure, that the pain would simply resolve or disappear on its own without intervention, and that the pain would not be or was not sufficiently severe to require remedial action. This subscale thus captured the tendency to underestimate the negative consequences of pain with intercourse and to identify the problem as unworthy of serious concern. Dyspareunia is not the only health problem in which we witness this type of strategy.

Symptom minimization has been shown to be a common help-seeking barrier for a number of health problems. It has also been shown to interfere with recommended or desirable health-related behaviors related to prevention, detection, and adherence to

medical regimens. Specifically, minimization has been linked to information avoidance in cardiac patients and lower medication adherence in asthmatic patients, as well as in individuals diagnosed with hypertension and diabetes (Adams & Carter, 2010; McGann, Sexton & Chyun, 2008; Rosenfield, Lindauer, & Darney, 2005). Minimization has also been found to be a barrier to seeking additional medical assessment among college students and community members who received borderline-high cholesterol results (Croyle, Sun & Louie, 1993). Denial, which is an extreme form of minimization, has been associated with the reluctance to pursue help-seeking in diabetic patients and in patients with Hepatitis B (Gazmararian, Ziemer & Barnes, 2009; Tan, Cheah, & Teo, 2005). Denial of potential cancer symptoms has also been identified as a barrier to mammogram utilization in African-American women and colorectal screening in men (Bajracharya, 2006; Peek, Sayad, & Markwardt, 2008). Overall, minimization and denial are common explanations as to why individuals confronted with a wide variety of symptoms avoid diagnostic testing, investigation of etiology, and treatment-seeking and adherence.

The state of the literature does not allow us to compare the influence of minimization on treatment seeking in dyspareunia versus other health concerns. Although the vast majority of physical etiologies for dyspareunia do not pose the risk of more life-threatening conditions, such as heart disease or asthma, dyspareunia does involve considerable deterrents to accessing help. Seeking treatment for dyspareunia necessarily involves the disclosure of an intimate and generally private aspect of life, as well as invasive, unpleasant pelvic examinations. On the other hand, most professional medical societies recommend annual cervical cancer screenings or triennial screenings and the

disclosure of dyspareunia could occur at that time (American Cancer Society, 2010; U. S. Preventative Task Force 2004). Research has shown that more women receive annual screenings (55%) than biennial (17%) or triennial screenings (16%) (Sirovich & Gilbert, 2004). There even appears to be a peak in screening for women between the ages of 20 and 24 (62.4%) which would suggest that young women experiencing pain with intercourse have ample opportunity to share their concerns during annual pelvic examinations that most already undergo.

Another potential reason minimization may be a barrier of particular relevance to dyspareunia is the fact that the pain occurs only during the act of sexual intercourse. Since the pain is limited to this specific activity, women may attribute the symptom to the mechanics of penetration, rather than to any tissue damage in their own bodies. It might also be easier to dismiss a pain that does not interfere with activities of daily living (ADL's). The pain of dyspareunia is also recurrent rather than chronic and thus easy to forget about, most of the time. The fact that the pain dissipates after termination of sexual activity may also explain why many women with dyspareunia report that they expect that the pain will somehow disappear spontaneously over time (Donaldson & Meana, 2011).

Finally, it is common for young women to anticipate and expect first coitus to be painful. The expectation of pain appears to be communicated to women informally via family members and/or peers or it is a conclusion they reach independently upon learning, either in a health education class or through other sources, about the probable tearing of the hymen at first intercourse (Tsui & Nicoladis, 2004). Thus, if pain happens at first intercourse, it is probably very easily dismissed. If the pain continues past the first or second sexual encounters, women might ascribe the pain to a period of continued

adjustment for their bodies, especially if they do not have sex regularly. Given that there is such little awareness or information about dyspareunia available to the general public, most women have no prior knowledge or readily-accessible resources to assist in determining when the discomfort ceases to be considered normal. Even if the onset of the pain occurs months or even years after first coitus, there remains little common understanding about what is considered “normal” pain or discomfort, what potentially may be causing it, or at what point the pain requires medical attention. Such uncertainty and paucity of available information may contribute to young women more easily disregarding a symptom about which they know very little.

There may be numerous reasons why women might dismiss the importance and potential consequences associated with intercourse pain. From shyness about disclosing sexual details, to apprehension about genital examinations, to misinformation or no information about dyspareunia, to expectations that delay the identification of a problem, it is not surprising that many young women engage in the minimization of the symptoms of dyspareunia, whether they actually have them or not.

Shame

The second component, Shame, comprised feelings associated with the perceived stigma of having a sexual problem. The Shame subscale focused on the complex experience of shame associated with having a symptom related to one’s sexuality. The desire to keep such intimate information about the symptoms private, especially out of the fear of negative evaluation by others, was subsumed under this component. The scale also encompassed a sense of embarrassment, as well as a tendency toward self-blame for the problem. The literature confirms that shame is a help-seeking barrier for a number of

disorders, although this may be particularly true of those that involve the genitals or other parts of the body associated with sexuality in general. Embarrassment, stigma and self-blame appear to feature prominently therein. Shame and embarrassment have been found to prevent people from seeking medical assistance even when there has been sufficient concern about the seriousness of the symptoms (Consedine, Krivoshekova, & Harris, 2007; Consedine, Magai, & Neugut, 2004). Research has also found that embarrassment impedes health behaviors such as treatment-seeking for incontinence, and cancer screenings, including those for breast, testicles, cervix, and colon (Consedine, et al., 2004; Emmons, et al., 2005; Gascoigne, Mason & Roberts, 1999; Goldman & Risica, 2004; Horrocks, Somerset, Stoddart, & Peters, 2004; Robb, Solarin, Power, Atkin, & Wardle, 2008; Waller, Bartoszek, Marlow & Wardle, 2009).

The fear of stigma and self-blame, another component of shame, have been identified as barriers to general health promotion (Corrigan, 2004; Fortenberry, et al., 2002). The existing literature on the shame barrier suggests that individuals hesitate to perform important health-related actions due to embarrassment, fear of a negative evaluation by others, and self-blame. Similar reasons for avoidance have been found in detection and help-seeking behavior for genitourinary- and sexually-related health problems, such as long-term urinary incontinence and sexually transmitted infections (Carr & Grambling, 2004; Hagglund & Wadensten, 2007). It is thus not difficult to see why pain with sexual intercourse might be a strong candidate for the experience of shame-related reluctance to seek help. Again, comparisons about the extent to which shame is a barrier in dyspareunia versus other health problems are not currently possible. Our societal

discomfort with sexuality in general, however, certainly suggests that shame might be particularly relevant to investigate in regard to the treatment of sexual difficulties.

Indeed, shame has been found to be a barrier for certain sexual health issues. For example, conditions involving the genitals appear to generate the fear of embarrassment as noted in patients with urinary stress incontinence (STIs) and premenstrual symptoms (Cunningham, Kerrigan, Jennings & Ellen, 2009; Hagglund & Wadensten, 2007; Hemachandra, Najapaksa, & Manderson, 2009; Ireland, Reid, Powell, & Petrie, 2005; Robinson & Swindle, 2000). This fear has been shown to impede those patients' treatment-seeking behaviors. Contributing to their fear of embarrassment, patients attending a sex-related medical visit reported having the concern that they might be negatively judged by their physician because of their symptoms (Consedine, et al., 2007). For those experiencing sexual dysfunction, embarrassment is among the most common reason that patients do not broach the topic with their doctors (Marwick, 1999). A related concern appears to be the fear that clinicians and other health-care providers might be dismissive of their self-reported sexual dysfunction symptoms. Female sexual dysfunction, in particular, remains the most oft-ignored concern, often due to embarrassment or discomfort with gender mismatched patient-doctor dynamics (Burd, Nevadunsky, & Bachmann, 2006; Goldstein, Lines, Pyke, & Scheld, 2009). The National Health and Social Life Survey found that only 20% of women who experienced symptoms of sexual dysfunction sought medical evaluation (Laumann, Gagnon, Michael, & Michaels, 1995).

Some women experiencing pain with intercourse of varying etiologies have indicated they experience shame about the problem. Women with vulvodynia have reported feeling

a sense of self-blame and inadequacy, such as the subjective experience of being an “inadequate woman” (Ayling & Ussher, 2008). The following quotes from different participants in the Donaldson & Meana (2011) study clearly illustrate the experience: *"When it starts to come up or if we're with friends and they start to talk about their sex lives, then I kind of want to walk away, I don't even want to be around cause I just kind of feel embarrassed and I'm just like oh please . . . cause I know what he's thinking. He's probably thinking oh she's in pain all the time. Our sex life isn't that great. So I just kind of feel embarrassed, and so I just kind of want to walk away when someone talks about it* (p. 819). *"I went into this thinking like, I am abnormal. I am different. Like, something's wrong. I'm just not normal like everyone else"* (p. 819). It is hardly surprising that this high level of embarrassment would be a detriment to seeking assistance from any type of health care provider (Donaldson & Meana, 2011). In the current study, even women who did not experience pain with intercourse or who were not even sexually active endorsed shame as being a significant barrier for them.

Although it is impossible to tease apart the extent to which this shame is a hard-wired evolutionarily adaptive attitude or whether it emanates strictly from societal norms, it is clear that there is an overall societal discomfort about sexual issues. This discomfort is particularly pronounced in the case of female sexuality which is routinely controlled to a larger extent than male sexuality, cross culturally (DeLamater, 1989; Frank, Bauer, Arican, Fincanci, & Iacopino, 1999; Reiss, 1986). There may thus be some gender-specific shame associated with reporting sexual problems (which necessarily denote sexual activity) or with the symptoms of dyspareunia (which happen to interfere with the most socially condoned sexual behavior - intercourse).

Fear of Severity/Seriousness

The Fear of Severity component addressed the concern that pain could be indicative of a severe health problem or have the potential to result in seriously negative consequences. The subscale also included items related to fear about what treatments might involve, as well as the apprehension that a treatment may not even exist. While fear of severity could theoretically be just as easily an incentive to seek treatment, in this study it represented a barrier. A health care provider might confirm women's worst-case fears about the gravity of the symptom and some simply preferred not to know.

Being concerned about the potential severity of a condition can be beneficial, as illustrated by research on the *Seriousness* dimension of the Health Belief Model (HBM) (Champion, 1993; Rosenstock, 1966). This particular dimension has been shown to increase health behaviors such as diagnostic testing (Dawson, et al., 2006). However, when the fear of severity surpasses a certain high level, it can interfere with health behaviors and help-seeking, contributing to the HBM *Barrier* dimension. The fear of test results confirming cancer has been found to be a barrier to screenings for cervical, breast and colorectal cancer (Bajracharya, 2006; Kang, Thomas, Kwon, Hyun & Jun, 2008; Waller, et al., 2009). Many breast and cervical cancer survivors report avoiding follow-up diagnostic testing because they worry that they will discover the cancer has returned (Ashing-Giwa, Lim, & Gonzalez, 2010). Fear of treatment and negative treatment effects has prevented many cancer patients from accessing quality care (Burg, et al., 2010). Individuals with Hepatitis C also report fear of treatment as a reason for avoiding medical consultation (Swan, et al., 2010). The fear of treatment also extends to individuals

undergoing dental procedures (Garcha, Shetiya, & Kakodkar, 2010), although it is important to consider that fear of going to the dentist may be a separate component.

In regard to dyspareunia, which rarely has a life threatening etiology or consequence, concerns may include the potential life impact of the problem, were it not to resolve. Generally speaking, pain with sexual intercourse can potentially wreak havoc on relationships (Donaldson & Meana, 2011; Meana, Binik, Khalife, & Cohen, 1997). Perhaps women are afraid to discover that their symptoms cannot be resolved medically and do not want to learn that they may potentially be facing a lifetime of relational challenges. On the other hand, because of the scarcity of public health information about dyspareunia, a significant number of women may fear that the pain experienced with intercourse indicates a serious disease or disorder related to internal organs, and that it may require invasive examinations and/or potentially even more painful treatment. Given the paucity of information available about intercourse pain, possible diagnoses, and treatment procedures, women may be left with a fear of 1) the unknown, 2) all known disorders that have pain as a symptom, 3) potential future consequences of the pain and any related disorders, 4) possibly gruesome treatment options and/or 5) the potential lack of any treatment options. Fear of dyspareunia being linked to a serious disease and fear that there may not be a cure were themes expressed repeatedly by women with dyspareunia in the Donaldson and Meana (2011) study. Whether hypothetical or experienced firsthand, dyspareunia clearly evokes a significant amount of fear pertaining to what the underlying problem, treatment, and consequences might be. This fear is sufficiently distressing for women to avoid investigating the actual severity of the problem, which unfortunately precludes finding a possible solution.

Correlations Between Barriers

All three subscales of the SHTBS-Dysp positively correlated with one another, the highest correlation being between Shame and Fear of Severity, followed by Shame and Minimization and, finally, Fear of Severity and Minimization. The combination of shame and fear of diagnosis has been reported as a potential barrier to health-promoting behavior in men receiving prostate cancer screenings and breast cancer screening in African-American patients with self-detected breast changes (Gullatte, Brawley, Kinney, Powe, & Mooney, 2010; Naccarrato, & Piccoloto, 2011). For those experiencing symptoms and already avoiding seeking assistance, there may also be shame associated with not seeking treatment. Despite the fact that the majority of our sample did not experience pain with intercourse, many still indicated that concerns about the pain's etiology, such as an STI, which could lead to feelings of shame. Women might be hesitant to seek help if they feel embarrassed and at fault for symptoms that they fear may additionally indicate a severe health condition.

Even more understandable is the connection between Shame and Minimization. This combination has been identified as a treatment-seeking barrier in women with long-term urinary incontinence and as a barrier to health-related guideline adherence in patients with diabetes and hypertension (Adams & Carter, 2010; Hagglund & Wadensten, 2007). It would seem that in health conditions in which symptoms are of an intimate nature and include a type of internalized or externalized stigma, individuals might be more inclined to negate the severity of their symptoms as a way to avoid seeking help from a professional whom they fear may reinforce that experience of stigma or shame. In our hypothetical case scenario depicting dyspareunia, women imagined that they would be

embarrassed by experiencing pain with sexual intercourse and that they would be inclined to minimize their symptom. Our interpretation is that if these women could convince themselves that the pain is trivial and that it does not require assistance, they would be able to decrease the associated shame of having a problem with sexual intercourse. In addition, by minimizing the pain and avoiding seeking treatment, they would potentially avoid added shame and embarrassment involved with disclosing their symptoms to a health care professional.

The more apparently paradoxical result from our study is the positive relationship between Minimization and Fear of Severity. How could one think something is 'no big deal' and concurrently be afraid that it might be very serious? This combination has actually been recorded previously in the health psychology literature. Minimization, in the form of denial, has been found in conjunction with the fear of severity as twin barriers to care-seeking for breast cancer symptoms and colorectal screenings (Bajracharya, 2006; Reifenstein, 2007). Although these studies did not examine the correlation between the barriers, it is interesting to note that in screenings for cancer, which is known to have improved prognosis with early detection, individuals are simultaneously fearful that they might have cancer and skeptical that their symptoms could possibly indicate such a serious condition. The fact that women in our study acknowledged and feared the potential severity of their pain, while at the same time dismissing its significance, is a finding parallel to those in the afore-mentioned studies. It appears that Minimization can serve as a type of coping mechanism against the anxiety and worry incorporated in the Fear of Severity barrier.

The use of minimization as a cognitive coping strategy has been found in various other health related conditions such as Alzheimer's disease, cancer, HIV/AIDS, myocardial infarctions, and physical disability (Brink, Karlson, & Hallberg, 2002; Commerford, Gular, Orr, & Resnikoff, 1994; MacQuarrie, 2007; Orr & Meyer, 1990; Persson & Ryden, 2006). It appears that minimization facilitates coping with the negative emotional consequences of fear and shame. Denial and minimization may in fact be useful in the initial stages of discovering a concerning diagnosis. It may allow the individual to fully integrate the health threat without feeling overwhelmed by it. However, the benefits do not last long. Persistent minimization is maladaptive when it interferes with eventually getting the needed help in a timely fashion.

Associated Constructs: What Are the Dyspareunia Treatment-Seeking Barriers Related to?

In this study, barriers to treatment-seeking for dyspareunia correlated positively with our selected measures of somatic amplification, (SSAS), health anxiety (HAQ), pain catastrophization (PCS) and negative affect (MHI). Women in our study who experienced generally benign bodily symptoms as more intense and disturbing more strongly endorsed barriers to seeking treatment for the hypothetical or real prospect of having pain with intercourse. Those who indicated experiencing substantial general anxiety about their health were also more likely to endorse treatment-seeking barriers. The tendency to exaggerate any experience of pain was associated with a greater likelihood to endorse barriers. And, finally, the more general distress a woman reported regularly, the more likely she was to endorse barriers to help-seeking. A more detailed interpretation of these findings follows.

Somatic Amplification and Health Anxiety

We hypothesized that the SHTBS-Dysp would correlate negatively with somatosensory amplification and health anxiety based on evidence supporting the related frequency of higher symptom reporting and higher rates of health care utilization (Barsky, et al., 2001; Duddo, et al., 2006; Hiller, et al., 2003; Jackson, et al., 2006; Lucock & Morley, 1996; Salkovskis & Warwick, 2001; Seivewright, et al., 2004). However, contrary to our hypotheses, we found that women who were hypersensitive to bodily sensations and who had higher levels of health anxiety were more likely to endorse reasons to avoid seeking help for painful sexual intercourse. There is some recent research to support the paradoxical effect of high levels of health anxiety resulting in less help-seeking, although our results for somatization appear to stand alone. Walker and Furer (2006) found that individuals will avoid situations which cause them to experience discomfort, such as informing themselves about illnesses or having physicians confirm a feared diagnosis. Even in those who receive treatment, high levels of health anxiety have been associated with poor prognosis in some patients (Luconi, et al., 2007).

One possible interpretation of our partly paradoxical findings is that hypervigilance, involved with somatic amplification and health anxiety, results in a type of enhanced attentional bias (Lees, et al., 2005). This attentional bias toward bodily sensations, which are perceived as being threatening and fearful, can increase pain severity and impairment and negatively impact understanding, problem-solving and decision making (Borkovec, Ray, & Stober, 1998; White, Craft, & Gervino, 2010). When the threat of pain is high and an individual's main concern is to escape and avoid the pain (Crombez, van Damme, & Eccleston, 2005), anything that might exacerbate the symptoms or increase anxiety, such

as treatment-seeking, may be avoided. This supports the hypervigilance-avoidance hypothesis which posits that anxious individuals initially attend to and then avoid threatening stimuli, including positive health information (Mogg, Bradley, DeBono, & Painter, 1997; Owens, et al., 2004). Women with provoked vestibulodynia (a sub-type of dyspareunia in which acute pain is experienced in the vulva during penetration) have in fact been found to be hypervigilant for pain (Desrochers, Bergeron, Khalife, Dupuis & Jodoin, 2009; Pukall, et al., 2002). If one combines this type of attentional bias with a lack of accurate public knowledge about dyspareunia, it is not that difficult to conceive of how fear and anxiety could also be a substantial barrier.

The addition of shame about having a sexual problem may further magnify reasons to avoid a health-care consultation. Health anxiety correlated most strongly with the Shame barrier, suggesting that women with high levels of health anxiety might prefer to avoid treatment for real or imagined pain with intercourse because they would be too ashamed or embarrassed. Similar to the women who amplify their somatic symptoms, those with high levels of health anxiety might seek help more often for most general health-related concerns but not for concerns related to sexuality. In the case of dyspareunia, they may worry that they will be negatively judged. If this were an older sample, one might have wondered if it was also possible that these women may have over-utilized medical services for minor ailments in the past and may have been treated as overly sensitive by their health care providers having their symptoms dismissed. If a history of having symptoms minimized and being negatively evaluated exists, women with high levels of health anxiety and somatic amplification would be more hesitant to risk a similar

encounter with a more intimate health concern. However, considering the mean age of our sample, this is an unlikely explanation for these results.

Pain Catastrophization

We hypothesized that the SHTBS-Dysp scores would correlate negatively with the PCS, as suggested by the literature on the impact of pain catastrophization on treatment seeking (Goubert, et al., 2002; McGrady, et al., 1999). Individuals who generally interpret pain as a sign of serious health threats tend to seek help more often. However, our results indicated that individuals who made catastrophic interpretations of their pain were more likely to endorse barriers to treatment-seeking. There is limited research to offer an explanation of this finding. In an attempt to discover possible correlates in patients with somatoform disorders, Rief, Hiller and Margraf (1998) found that catastrophization of bodily symptoms, including pain, was not related to general health-seeking behavior. Unfortunately, this study did not provide information as to the impact of catastrophization on health care utilization. We are then left to focus on our findings to help us better understand the connection between treatment avoidance and pain catastrophization.

Pain catastrophization correlated highest with the Fear of Severity subscale, which suggests that the more negative the interpretation of what the pain might indicate, the more worried and concerned these women might be about the severity of the problem underlying the dyspareunia. This surmises the views of Asmundson, Vlaeyen, and Crombez (2004) who posit that fear and catastrophization can influence the experience of pain, creating additional psychological distress. In an attempt to cope with the repercussions of such an experience of even hypothetical pain, women in our study might

also minimize their symptoms and avoid help seeking. Catastrophization of pain during intercourse has been found to impact the experience negatively and contribute to the negative assessment of sexual stimuli (Brauer, de Jong, Huijding, Laan, & ter Kuile, 2009; Pukall, et al., 2006) in women with dyspareunia. Again, despite the fact that most women in our sample did not experience pain with sexual intercourse, those who had a general pain catastrophizing style were more likely to endorse treatment-seeking barriers.

Negative Affect

Evidence supports the view that individuals high in negative affect tend to be more likely to seek help for physical problems. Health care utilization has been shown to be positively related to negative affect and emotional worries (Drossman, et al., 1988; Edege, 2007; Villanueva-Torrecillas, 2004). Based on these findings, we hypothesized that women who experience higher levels of negative affect would be less likely to endorse barriers to seeking help. However, we found that women with high levels of negative affect were more likely to endorse barriers to help-seeking, whether they experienced pain with sexual intercourse or only imagined themselves to. Considering that higher levels of mood disturbances, such as depression and anxiety, are associated with lower internal locus of control and self-efficacy, it is possible that these women did not feel they would be capable of acquiring the help needed (Heath, Saliba, Mahmassani, Major, & Khoury, 2008). Locus of control and self-efficacy also influence coping strategies and clinical outcomes such as health behaviors and pain perception (French, Holroyd, Pinell, Malinoski, O'Donnell, & Hill, 2000; Rollnik, Karst, Fink, & Dengler, 2001). Based on the magnitude of correlations of the SHBTS-Dysp subscales with the MHI, it appears that women with greater distress were more likely to minimize or deny

real or imagined symptoms, possibly as a way to avoid interacting with a health care provider they felt hopeless about or afraid of. This minimization could also serve as a coping mechanism for their lack of self-efficacy related to managing the pain.

Hypothesized Barriers and Self-reported Treatment-Seeking Behavior

In our study, women with dyspareunia who indicated they would be more likely to endorse barriers to treatment seeking also reported fewer attempts at actually seeking assistance from health care providers. Women who had reported their symptoms to a health professional were less likely to endorse barriers than women who had not reported. This suggests that the barriers endorsed by women with dyspareunia in our study actually reflected what was preventing them from seeking help. However, it is important to consider that these women provided self-reports of their contacts with health care professionals and care must be taken in interpretation of this data. Future research should avail itself of documented treatment-seeking attempts to truly test if the SHBTS is indeed predictive of actual behavior.

Group Differences

The three groups of women in our study (women with dyspareunia, women who were sexually active but did not experience pain, and women yet to be sexually active) differed somewhat in the particular barriers they were more likely to endorse. Women who were sexually active but did not experience pain with sex scored lower on the subscale of shame than the other two groups of women. Perhaps shame was harder to imagine when they did not experience the problem. However, women who had yet to have sex scored higher than sexually active and pain-free women on the shame subscale. It is hard to interpret this finding other than to speculate that these young women who have delayed

their sexual debut are likely more conservative, or perhaps, religious and consequently more likely to attach shame to potential sexual problems and their disclosure. This group of sexually inactive women also scored higher on the subscale of fear of severity than the sexually active and pain-free women. This may reflect some apprehension about an activity they know little about. Women who have had sexual intercourse may be more familiar with the occasional discomfort experienced during sexual activity and be less likely to ruminate over potentially negative consequences of the symptom.

The most surprising, and concerning, group difference found in this study was the fact that women with dyspareunia were more likely to endorse barriers to treatment seeking than the other two groups of women. One would intuit that the actual presence of the symptom would promote help-seeking, but it was quite the opposite in this study. Women actually experiencing dyspareunia indicated a greater tendency to minimize the pain than did other women. Despite their real experience, these young women tended to consider the pain sufficiently 'trivial' to avoid seeking assistance. This is despite the fact that research clearly indicates that these young women have substantial levels of associated distress, relationship difficulties, and physical discomfort (Donaldson & Meana, 2011).

Significance of Research on Treatment Barriers in Dyspareunia

Implications for Physicians

Unfortunately, the history of individuals not reporting their sexual symptoms to medical professionals and of medical professionals not asking their patients about sexual concerns is a long one. Patients have reported that the reluctance to broach the topic of sexuality is due to their own embarrassment and the worry that their health care

professional will be embarrassed by such a conversation (Marwick, 1999). A study of physicians' willingness to assess sexual risk behaviors reinforces this worry, as physicians cited feeling embarrassed as a significant barrier to inquiring about patients' sexual practices (Khan, Plummer, Hussain, & Minichiello, 2007). These physicians admitted that further training in sexuality would help improve their skill in sexual health history-taking. Yet other literature documents the general lack of adequate sexuality training in medical school, which naturally inhibits physicians' willingness to broach the topic (Tsimtsiou, Hatzimouratidis, Nakopoulou, Kyra, Salpigdis, & Hatzichristou, 2006). In addition to the lack of training and embarrassment regarding sexually-related topics, medical professionals may experience frustration with the paucity of treatment options for sexual disorders and their lack of confidence in the available ones (Abdolrasulnia, et al., 2010). This might also contribute to their hesitancy to discuss sexual concerns with their patients (Goldstein, et al., 2009).

The reluctance physicians experience in opening a dialogue about sexuality is particularly concerning because, according to our study, doctors were in fact reported to be the most likely health-care professionals women would turn to, a strong preference over sex therapists or psychologists also reflected in the literature (Spector & Carey, 1990). However, it is crucial for all health care providers, including nurses, psychologists and physical therapists, to demonstrate comfort with the topic of sexuality. Considering that there is a current movement toward a more integrated, multidisciplinary, and systematic approach to treating pain with sexual intercourse (Meana, 2009; Weeks, 2005), these women may need to disclose the nature of their symptoms to more than one type of health-care professional.

In order to overcome barriers to treatment-seeking, substantial changes in the way health care professionals address sexual concerns need to be considered. First of all, it is crucial that health care providers ask directly about sexual function, even if that is not the presenting concern during an office visit. It is also important that the exchange be a positive one. The health care provider needs to be knowledgeable about the disorder and enterprising about the assessment of pain and the full consideration of available treatment options, given the woman's specific symptoms and psychosocial profile. It is particularly important for physicians to take reports of pain with sexual intercourse seriously. They cannot become co-conspirators in the minimization of this problem. While women need to be informed that recurrent pain with sexual intercourse is not normal, they also need reassurance and hope. Considering the fear many women have about the cause of their pain and the procedures that might be required to treat it, women would benefit from having information about possible etiologies and treatments explained to them. Reaching all women before pain begins, would be ideal and thus public health care education needs to be brought into the equation.

Implications for Public Health Care Provision

Increased education about this disorder may be a critical component to breaking down the barriers to treatment-seeking for dyspareunia, especially considering that promotion of attention to health information has been associated with positive health behaviors (Shim, Kelly, & Hornik, 2006). In Donaldson and Meana's (2011) study of dyspareunia in college women, not one of them reported ever having heard of intercourse pain as an identifiable disorder. It is much easier to deny symptoms when there is limited or no awareness of the condition. To help women recognize their symptoms, and decrease the

tendency towards minimizing, there needs to be an emphasis on increasing public awareness of this distressing women's health condition. In our study, the Internet was the most popular source cited for help-seeking. Since women have been known to avoid other informal sources of health information, such as family and peers (Ward & Ogden, 1994), the Internet may be an easier way of acquiring information since it avoids the potential embarrassment of disclosure. Either through the creation of individual websites or as part of public health advertisements for health care facilities, utilizing the Internet as a conduit could potentially reach those individuals who may still possess significant barriers to seeking help from an actual person.

Ideally, public awareness attempts need to target women before they experience pain with sexual intercourse. As evident in this study, even women who are not sexually active already endorse a significant level of reluctance to seeking treatment of a potential health problem. It would be possible to include information about sexual pain disorders via sex education classes or health classes, where such curricular material is appropriate. Additionally, gynecologists may have the best opportunity to provide information to their patients either through signage and pamphlets in their offices or as part of their inquiries during annual examinations. Especially for women who have already started to experience pain with intercourse, the role of the gynecologist becomes even more crucial in providing the necessary information to facilitate increased disclosure about the specifics of the pain and to offer a knowledgeable perspective about the disorder and possible treatments. Primary care doctors also could be instrumental in providing information, if they included sexual health as part of their typical history-taking. This would require training in medical school and continuing education programs for doctors.

And, finally, considering that the highest prevalence of vulvovaginal pain has been found in young women (Laumann, et al., 1999), education efforts on college campuses would target the population at a time when treatment-seeking has the potential of being the most beneficial - early after onset.

Limitations

This study had a number of limitations. First, the women who participated in this study were Psychology 101 students who volunteered for the study to receive research credit. It is not possible to ascertain what possible biases may have been included by the self-selection of these participants. However, two can be inferred. The first of these is the fact that, generally speaking, volunteers in sexuality-related studies tend to be more liberal. The second is that these young women were already more highly educated than the majority of the general population. Considering that liberality and education are more highly correlated with comfort with sexuality and with positive health behaviors, one can only surmise that the barriers to treatment seeking in the case of dyspareunia would be even more significant if a general population had been sampled (Lefkowitz, Boone, & Shearer, 2004; Sanders, Graham, Yarber, Crosby, Dodge, & Milhausen, 2006). Second, because our sample of women who actually had dyspareunia was much smaller than those who were sexually active without pain and not yet sexually active, we cannot be as confident as we might be about group differences or lack thereof. Third, the hypothetical health problem scenario, although widely used in the literature clearly has its limitations. For example, how scenarios are worded can greatly impact how individuals respond. Scenarios involving end-of-life decisions regarding treatments find different results based upon using positive versus negative wording (Kressel & Chapman, 2007). Since the self-reported barriers were provided for a hypothetical situation and not the current experience necessarily, it is difficult to explore predictions of

future treatment-seeking behaviors for women with dyspareunia and those without (Mansfield, et al., 2005). Finally, no actual behavioral indicators were used to test the predictive validity of our measure in regards to actual help-seeking and/or treatment adherence.

Future Research

Through the creation of a measure of possible barriers for dyspareunia, we were able to investigate the reasons that might keep women from seeking help for sexual pain. However, the validity of results is contingent on the validity of this measure. Additional psychometric testing of this measure via confirmatory principal component analysis with a different sample would assist in determining whether the factor solution found in this study provides an adequate fit for other samples. Also, administering the measure to a larger number of women who actually experience dyspareunia may ultimately be more helpful. Tracking behavioral outcomes would also be the ultimate test of the measure's predictive validity. This might also allow for further analyses on the extent to which these barriers influence treatment-seeking in dyspareunia and how that might compare to other health concerns. It might also be useful to compare the barriers to treatment-seeking in these young women versus those of an older population. Not only would it offer insight into the development of these barriers and potential new ones, but it could shed light on how the experience of dyspareunia can influence women's perceptions of treatment over time. Adapting this measure to target hypothetical scenarios or real experiences of other types of sexual disorders (e.g., hypoactive sexual desire disorder, erectile dysfunction, premature ejaculation) could provide insight into differential treatment barriers for different sexual dysfunctions.

This study focused on the barriers young women would endorse in the event or actuality of having pain with sexual intercourse. A useful next step would be to investigate factors that could facilitate help-seeking in women with dyspareunia. By inquiring as to what assisted them in their decision-making process to disclose their symptom to a health professional, particularly how they may have overcome their barriers, we may be able to provide more opportunities and avenues for women with dyspareunia to seek help. Another useful avenue would be to investigate the experiences of women with dyspareunia who have actually reported the symptom to health care professionals. How were they made to feel? How seriously were they taken? How effortful was the treatment approach? This type of information would be helpful in the development of medical school training modules. Thirdly, research involving the most effective types of public health messages would also be helpful, as it would be central to develop these in a way that drew women in rather than scare or turn them away. There is an art to public health messaging but it takes science to know that that is for any given health issue and any given population. Finally, an investigation of cultural differences in attitudes about dyspareunia could ensure that women from different ethno-cultural groups are approached in culturally informed ways that promote health behavior. Painful intercourse is a socio-culturally loaded sexual dysfunction clearly influenced by internalized social messages about sexuality. To get under the determinants of treatment-seeking, we necessarily have to get under these messages so as to promote the sexual well-being of all women.

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APPENDIX A:

EXHIBITS & TABLES

Exhibit A1 Sexual Health Treatment Barriers Scale-Dyspareunia-Exploratory Version
(SHTBS-DyspEXPV)

Imagine that you begin to experience pain in your genitals or pelvic area while having sexual intercourse. The pain prevents you from enjoying sex and sometimes it hurts so much that you want to or have to stop having sex. You notice that this is now happening regularly whenever you have intercourse. You consider seeking help from a health professional. Below are several reasons or attitudes that make you hesitate to seek help. Please read each statement and decide how true it is for you.

If I had pain with intercourse regularly, I would...

Not at all true	Not very true	Somewhat true	Moderately true	Very true
1	2	3	4	5

1. ...believe that the problem is probably temporary.
2. ...think the pain would go away on its own.
3. ...think that health professionals would not know how to treat it.
4. ...worry that the health professional would judge me negatively.
5. ...worry that the health professional might find I had a serious health problem.
6. ...worry that others would find out about the problem if I told a health professional.
7. ...believe this is a relationship problem rather than a health one.
8. ...delay getting treatment because I do not have health insurance.
9. ...believe that problems like this are part of having sex.
10. ...believe that problems like this are just something you have to deal with.
11. ...be afraid that the health professional would not take my problem seriously.
12. ...worry that the health professional would think that I am promiscuous (loose).
13. ...worry that I would be told that I have a sexually transmitted infection.
14. ...believe this is a sexual problem rather than a health one.
15. ...think that this is not a big enough problem for a consultation with a health professional.
16. ...not want the sort of help available.
17. ...be afraid that I would be told my behavior had caused this problem.
18. ...think this is a private issue and would not want to tell anyone.
19. ...think that it is incurable or untreatable.
20. ...delay seeking treatment because I do not have a regular health care provider.
21. ...believe that a health professional would not be able to tell me things about this problem that I do not already know.

22. ...feel uneasy about my partner knowing that I was having a problem serious enough to seek help.
23. ...be afraid of what the treatment for this problem might be.
24. ...think there is no treatment for this.
25. ...not have enough time to seek help from a health professional
26. ...believe this is just a regular woman's problem.
27. ...believe this problem does not require treatment.
28. ...not trust health professionals to help with it.
29. ...worry that I had caused this problem.
30. ...be afraid that they might tell me there is no cure or treatment for it.
31. ...be afraid that I would have to take my clothes off to be examined.
32. ...think the problem was with my partner and not me.
33. ...be afraid that the health professional would order a series of tests I could not afford.
34. ...prefer to wait until I was sure the problem was serious enough to seek assistance.
35. ...not want a health professional to examine my private parts (genitalia).
36. ...think it is not a big deal because I know other women with this problem who have not sought treatment.
37. ...have difficulty fitting an appointment with a health professional into my busy schedule.
38. ...be afraid that I am overreacting to a problem that is not that serious.
39. ...be afraid the health professional might tell others about my problem.
40. ...be afraid to find out that this problem may impact my ability to have children in the future.
41. ...not think about seeking help since I never heard about this problem.
42. ...be concerned that my health insurance would not pay for treatment.
43. ...prefer just to suck it up rather than dwell on my problems by going to a health professional.
44. ...not want to disclose personal information about myself to health professionals.
45. ...worry that the health professional would think I am abnormal.
46. ...be afraid that the treatment for this would involve my partner.
47. ...worry that a health professional would tell others about this problem of mine.
48. ...think there would be nothing a health professional could do about it.
49. ...be concerned that I could not afford treatment.
50. ...consider this to be a minor problem that does not require treatment.
51. ...believe that individuals can fix this type of problem on their own.
52. ...be afraid that my friends and/or relatives would find out that I was having a problem serious enough to seek help.
53. ...be afraid that the treatment for this would affect my relationship with my partner.
54. ...not want my problem discussed among other health professionals.
55. ...not be able to get help due to a lack of access to a health professional.

Exhibit A1 (cont'd)

- 56. ...find it embarrassing to disclose to a health professional that I was having a problem with sex.
- 57. ...be concerned about their being a record (e.g., medical record or insurance record) of my seeking help for this type of problem.
- 58. ...not know what type of health professional to consult with.

How likely would you be to seek help for this problem from a.....

Not at all true	Not very true	Somewhat true	Moderately true	Very true
1	2	3	4	5

- 59. ... sex therapist?
- 60. ... psychologist?
- 61. ... medical doctor?
- 62. ... friend?
- 63. ... sexual partner?
- 64. ... relative(s)?
- 65. ... the Internet?
- 66. ... clergy member?

Exhibit A2 Sexual Health Treatment Barriers Scale – Dyspareunia (SHTBS-Dysp)

Imagine that you begin to experience pain in your genitals or pelvic area while having sexual intercourse. The pain prevents you from enjoying sex and sometimes it hurts so much that you want to or have to stop having sex. You notice that this is now happening regularly whenever you have intercourse. You consider seeking help from a health professional. Below are several reasons or attitudes that make you hesitate to seek help. Please read each statement and decide how true it is for you.

If I had pain with intercourse regularly, I would...

Not at all true	Not very true	Somewhat true	Moderately true	Very true
1	2	3	4	5

- 1...think the pain will go away on its own.
- 2...worry that the health professional would judge me negatively.
- 3...worry that the health professional might find I had a serious health problem.
- 4...worry that others would find out about the problem if I told a health professional.
- 5...believe that problems like this are just something you deal with.
- 6...be afraid the health professional would not take my problem seriously.
- 7...worry that the health professional would think I am promiscuous (loose).
- 8...worry that I would be told that I have a sexually transmitted infection.
- 9...think that this is not a big enough for a consultation with a health professional.
- 10...be afraid I would be told my behavior had caused this problem.
- 11...feel uneasy about my partner knowing that I was having a problem serious enough to seek help.
- 12...be afraid of what the treatment for this problem might be.
- 13...believe that this is just a regular woman's problem.
- 14...be afraid that they might tell me there is no treatment or cure for it.
- 15...prefer to wait until I was sure the problem was serious enough to seek assistance.
- 16...think it is not a big deal because I know other women with this problem who have not sought treatment.
- 17...be afraid I am overreacting to a problem that is not that serious.
- 18...be afraid the health professional might tell others about my problem.
- 19...be afraid to find out that this problem may impact my ability to have children in the future.
- 20...not think about seeking help since I have never heard about this problem.
- 21...prefer just to suck it up rather than dwell on my problems by going to a health professional.
- 22...not want to disclose personal information about myself to health professionals.
- 23...be afraid that the treatment for this would involve my partner.
- 24...worry that a health professional would tell others about this problem of mine.

25. ...consider this to be a minor problem that does not require treatment.
26. ...be afraid that the treatment for this would affect my relationship with my partner.
27. ...not want my problem discussed among other health professionals.
28. ...find it embarrassing to disclose to a health professional that I was having a problem with sex.

Table A1
Hypothesized Subscales of the SHTBS-DyspEXPV

Minimizing Problem

1. ...believe that the problem is probably temporary.
2. ...think the pain would go away on its own.
9. ...believe that problems like this are part of having sex.
10. ...believe that problems like this are just something you have to deal with.
15. ...think that this is not a big enough problem for a consultation with a health professional.
26. ...believe this is just a regular woman's problem.
34. ...prefer to wait until I was sure the problem was serious enough to seek assistance.
38. ...be afraid that I am overreacting to a problem that is not that serious.
43. ...prefer just to suck it up rather than dwell on my problems by going to a health professional.
50. ...consider this to be a minor problem that does not require treatment.

Distrust of Health Professionals

3. ...think that health professionals would not know how to treat it.
11. ...be afraid that the health professional would not take my problem seriously.
16. ...not want the sort of help available.
21. ...believe that a health professional would not be able to tell me things about this problem that I do not already know.
28. ...not trust health professionals to help with it.
44. ...not want to disclose personal information about myself to health professionals.
48. ...think there would be nothing a health professional could do about it.
51. ...believe that individuals can fix this type of problem on their own.

Shame

4. ...worry that the health professional would judge me negatively.
12. ...worry that the health professional would think that I am promiscuous (loose).
17. ...be afraid that I would be told my behavior had caused this problem.
22. ...feel uneasy about my partner knowing that I was having a problem serious enough to seek help.
29. ...worry that I had caused this problem.
45. ...worry that the health professional would think I am abnormal.
47. ...worry that a health professional would tell others about this problem of mine.

Table A1 (cont'd)

- 52. ...be afraid that my friends and/or relatives would find out that I was having a problem serious enough to seek help.
- 56. ...find it embarrassing to disclose to a health professional that I was having a problem with sex.

Fear of Severity/Impact

- 5. ...worry that the health professional might find I had a serious health problem.
- 13. ...worry that I would be told that I have a sexually transmitted infection.
- 23. ...be afraid of what the treatment for this problem might be.
- 30. ...be afraid that they might tell me there is no cure or treatment for it.
- 40. ...be afraid to find out that this problem may impact my ability to have children in the future.
- 46. ...be afraid that the treatment for this would involve my partner.
- 53. ...be afraid that the treatment for this would affect my relationship with my partner.

Privacy

- 6. ...worry that others would find out about the problem if I told a health professional.
- 18. ...think this is a private issue and would not want to tell anyone.
- 31. ...be afraid that I would have to take my clothes off to be examined.
- 35. ...not want a health professional to examine my private parts (genitalia).
- 39. ...be afraid the health professional might tell others about my problem.
- 54. ...not want my problem discussed among other health professionals.
- 57. ...be concerned about their being a record (e.g., medical record or insurance record) of my seeking help for this type of problem.

Problem identity confusion

- 7. ...believe this is a relationship problem rather than a health one.
- 14. ...believe this is a sexual problem rather than a health one.
- 19. ...think that it is incurable or untreatable.
- 24. ...think there is no treatment for this.
- 27. ...believe this problem does not require treatment.
- 32. ...think the problem was with my partner and not me.
- 36. ...think it is not a big deal because I know other women with this problem who have not sought treatment.
- 41. ...not think about seeking help since I never heard about this problem.
- 58. ...not know what type of health professional to consult with.

Lack of resources

- 8. ...delay getting treatment because I do not have health insurance.
- 20. ...delay seeking treatment because I do not have a regular health care provider.
- 25. ...not have enough time to seek help from a health professional.
- 33. ...be afraid that the health professional would order a series of tests I could not afford.
- 37. ...have difficulty fitting an appointment with a health professional into my busy schedule.
- 42. ...be concerned that my health insurance would not pay for treatment.
- 49. ...be concerned that I could not afford treatment.
- 55. ...not be able to get help due to a lack of access to a health professional.

Table A2
Demographic Characteristics of Entire Sample (N=1034)

Characteristic	<u>M</u>	<u>SD</u>	<u>N</u>	%
Age	20.08	2.63		
Ethnicity				
African American			128	12.4
American Indian/Native American			8	0.8
Asian American			184	17.8
EuroAmerican			469	45.4
Hispanic American			170	16.4
Pacific Islander American			67	6.5
Other			53	5.0
Relationship Status				
Single and not currently dating			341	33.0
Single and currently dating			185	17.9
Steady boyfriend			397	38.4
Cohabiting or married			111	10.7
Ever had sexual intercourse			830	79.6
Age at first intercourse	16.71	1.82		
Nulliparous			985	95.2
Not sexually active			204	20.2
Met criteria for dyspareunia			102	10.3

Table A3
Demographic Characteristics of Test-Retest Sample (N=24)

Characteristic	<u>M</u>	<u>SD</u>	<u>N</u>	<u>%</u>
Age	20.08	2.52		
Ethnicity				
African American			4	16.7
American Indian/Native American			0	0.0
Asian American			4	16.7
EuroAmerican			6	25.0
Hispanic American			5	20.8
Pacific Islander American			4	16.7
Other			1	4.2
Relationship Status				
Single and not currently dating			9	37.5
Single and currently dating			3	12.5
Steady boyfriend			11	45.8
Cohabiting or married			1	4.2
Ever had sexual intercourse			20	83.3
Age at first intercourse	16.35	1.63		
Nulliparous			24	100.0
Not sexually active			4	16.7
Met criteria for dyspareunia			2	8.3

Table A4

Item Descriptive Statistics*Items with item-total correlations in boldface were excluded from all further analyses.*

Item	corrected item-total correlations	alpha-if item- deleted	<u>M</u>	<u>SD</u>
1	0.25	0.96	3.13	1.21
2	0.32	0.96	3.25	1.16
3	0.29	0.96	2.24	1.24
4	0.57	0.96	2.29	1.23
5	0.41	0.96	3.08	1.21
6	0.60	0.96	2.20	1.24
7	0.39	0.96	1.90	1.04
8	0.32	0.96	1.98	1.32
9	0.44	0.96	2.57	1.17
10	0.50	0.96	2.39	1.16
11	0.54	0.96	1.98	1.07
12	0.60	0.96	2.01	1.18
13	0.33	0.96	3.13	1.31
14	0.43	0.96	2.66	1.07
15	0.52	0.96	2.44	1.13
16	0.52	0.96	1.92	0.98
17	0.56	0.96	2.20	1.14
18	0.64	0.96	2.58	1.25
19	0.55	0.96	2.05	1.03
20	0.41	0.96	2.03	1.26
21	0.58	0.96	2.03	1.07
22	0.61	0.96	2.57	1.29
23	0.60	0.96	2.83	1.20
24	0.52	0.96	2.12	1.12
25	0.50	0.96	2.10	1.06
26	0.58	0.96	2.54	1.09
27	0.56	0.96	2.28	1.05
28	0.61	0.96	1.75	0.92
29	0.61	0.96	2.44	1.19
30	0.54	0.96	2.61	1.24
31	0.58	0.96	2.42	1.37
32	0.40	0.96	2.15	1.00
33	0.55	0.96	2.58	1.33
34	0.56	0.96	2.96	1.28

Table A4 (cont'd)

Variables in boldface were excluded from all further analyses.

Item	corrected item-total correlations	alpha-if item- deleted	<u>M</u>	<u>SD</u>
35	0.57	0.96	2.39	1.33
36	0.49	0.96	2.20	1.10
37	0.42	0.96	2.28	1.17
38	0.62	0.96	2.73	1.13
39	0.65	0.96	1.87	1.09
40	0.43	0.96	3.17	1.31
41	0.64	0.96	2.10	1.04
42	0.48	0.96	2.35	1.31
43	0.66	0.96	2.34	1.19
44	0.72	0.96	2.03	1.11
45	0.70	0.96	1.93	1.05
46	0.63	0.96	2.45	1.19
47	0.65	0.96	1.84	1.12
48	0.61	0.96	2.05	1.10
49	0.48	0.96	2.45	1.35
50	0.63	0.96	2.48	1.11
51	0.59	0.96	2.43	1.08
52	0.66	0.96	2.51	1.31
53	0.63	0.96	2.74	1.28
54	0.56	0.96	2.43	1.32
55	0.52	0.96	1.98	1.15
56	0.70	0.96	2.47	1.31
57	0.67	0.96	2.28	1.28
58	0.60	0.96	2.25	1.22

Table A5

Factor Loadings from Principle-Component Analysis with an Oblique Rotation (Promax with Kaiser Normalization; Kappa=2.5) and Communalities.

Note: Salient factor pattern matrix coefficients are in boldface. Structural loadings are in parentheses. Factor 1 = Minimization. Factor 2 = Shame. Factor 3 = Fear of Severity. Factor 4 = Structural Problems. h² = communality.

Item	1	2	3	4	h ²
2	.66 (.57)	-.14 (.12)	.04 (.15)	-.16 (.02)	.36
3	.27 (.34)	.30 (.33)	-.31 (-.05)	.14 (.23)	.23
4	.03 (.34)	.69 (.71)	.10 (.38)	.11 (.19)	.53
5	-.12 (-.14)	.18 (.36)	.53 (.57)	.01 (.20)	.35
6	-.06 (.30)	.70 (.74)	.18 (.45)	.25 (.04)	.57
7	.23 (.36)	.30 (.39)	-.19 (.09)	.20 (.32)	.25
10	.65 (.67)	.14 (.37)	-.10 (.17)	-.04 (.19)	.46
11	.20 (.43)	.50 (.59)	-.17 (.19)	.21 (.40)	.43
12	-.00 (.33)	.68 (.73)	.17 (.44)	-.06 (.24)	.55
13	-.09 (.11)	-.04 (.21)	.74 (.66)	-.10 (.11)	.47
14	.49 (.52)	-.04 (.25)	.13 (.28)	.03 (.22)	.29
15	.73 (.73)	.13 (.38)	-.12 (.16)	-.05 (.19)	.55
17	.07 (.34)	.40 (.56)	.36 (.53)	-.06 (.22)	.42
18	.32 (.54)	.39 (.60)	.24 (.48)	-.10 (.22)	.51
19	.30 (.49)	.19 (.45)	.12 (.37)	.19 (.40)	.35
20	-.01 (.21)	-.07 (.20)	-.06 (.19)	.84 (.79)	.64
21	.37 (.55)	.21 (.46)	-.15 (.21)	.43 (.58)	.52
22	.18 (.42)	.07 (.42)	.60 (.70)	.04 (.32)	.53
23	.09 (.36)	.04 (.41)	.68 (.75)	.08 (.35)	.59
24	.26 (.44)	.07 (.37)	.19 (.40)	.28 (.45)	.34
25	.26 (.42)	.14 (.37)	-.03 (.23)	.35 (.47)	.32
26	.82 (.80)	-.01 (.35)	.04 (.28)	-.08 (.20)	.65
29	.09 (.37)	.21 (.50)	.56 (.68)	.01 (.30)	.52
30	.01 (.28)	.04 (.37)	.61 (.68)	.17 (.39)	.50
31	.08 (.36)	.37 (.55)	.29 (.50)	.04 (.30)	.39
32	.02 (.23)	.16 (.34)	.24 (.38)	.18 (.33)	.21
33	-.04 (.25)	-.06 (.46)	.25 (.21)	.73 (.78)	.66
34	.61 (.66)	-.17 (.26)	.23 (.41)	.15 (.36)	.51
36	.65 (.67)	.08 (.35)	-.05 (.20)	-.01 (.21)	.46

Table A5 (cont'd)

Item	1	2	3	4	h ²
38	.67 (.73)	-.09 (.34)	.27 (.47)	.02 (.30)	.60
39	-.06 (.33)	.82 (.83)	.08 (.42)	-.00 (.30)	.70
40	-.01 (.20)	-.04 (.26)	.68 (.66)	.02 (.23)	.44
41	.47 (.63)	.24 (.52)	.06 (.36)	.12 (.37)	.48
42	-.10 (.19)	-.04 (.27)	.15 (.37)	.80 (.80)	.66
43	.61 (.73)	.16 (.49)	.07 (.37)	.08 (.35)	.57
44	.13 (.48)	.65 (.77)	.05 (.42)	.12 (.41)	.63
46	.08 (.38)	.20 (.51)	.52 (.67)	.09 (.37)	.53
47	-.09 (.32)	.85 (.84)	.04 (.40)	.02 (.32)	.71
48	.27 (.51)	.31 (.54)	.02 (.34)	.27 (.48)	.44
50	.77 (.80)	.01 (.39)	.06 (.33)	.02 (.29)	.65
52	.07 (.40)	.41 (.63)	.41 (.62)	-.00 (.31)	.55
53	.05 (.36)	.18 (.50)	.60 (.73)	.08 (.36)	.57
54	-.04 (.29)	.56 (.64)	.21 (.45)	.03 (.28)	.44
55	-.08 (.23)	.11 (.36)	.04 (.31)	.76 (.79)	.63
56	.04 (.40)	.55 (.72)	.32 (.58)	.03 (.34)	.61
58	.11 (.39)	.27 (.51)	.17 (.43)	.30 (.50)	.41

Table A6

Interfactor Correlations, Eigenvalues, and Percentage of Variance

Factor	1	2	3	4
1. Minimization	--			
2. Shame	.45	--		
3. Fear of Severity	.33	.44	--	
4. Structural Problems	.32	.36	.33	--
Variance %	33.37	6.88	5.00	4.23
Eigenvalues	15.35	3.16	2.30	1.94

Table A7

Scale Descriptive Statistics*Variables in boldface were excluded from all further analyses.*

Scale	Cronbach's alpha	Item	alpha-if- item- deleted
Minimization	.89	2	.89
		10	.89
		15	.88
		26	.88
		34	.89
		36	.89
		38	.88
		41	.89
		43	.88
		50	.87
Shame	.91	4	.90
		6	.90
		11	.90
		12	.89
		17	.90
		39	.89
		44	.89
		47	.89
		54	.90
		56	.89
Fear of Severity	.86	5	.85
		13	.85
		22	.84
		23	.83
		30	.84
		40	.85
		46	.84
		53	.83

Table A7 (cont'd)

Scale Descriptive Statistics*Variables in boldface were excluded from all further analyses.*

Scale	Cronbach's alpha	Item	alpha-if- item- deleted
Structural Problems	.84	53	.83
		20	.79
		21	.86
		33	.79
		42	.78
		55	.79

Table A8
Sexual Health Treatment Barriers Scale – Dyspareunia (SHTBS-Dysp) Subscales

Imagine that you begin to experience pain in your genitals or pelvic area while having sexual intercourse. The pain prevents you from enjoying sex and sometimes it hurts so much that you want to or have to stop having sex. You notice that this is now happening regularly whenever you have intercourse. You consider seeking help from a health professional. Below are several reasons or attitudes that make you hesitate to seek help. Please read each statement and decide how true it is for you.

If I had pain with intercourse regularly, I would...

Not at all true	Not very true	Somewhat true	Moderately true	Very true
1	2	3	4	5

Minimization

- 1. ...think the pain will go away on its own.
- 5. ...believe that problems like this are just something you deal with.
- 9. ...think that this is not a big enough problem for a consultation with a health professional.
- 13. ...believe that this is just a regular woman's problem.
- 15. ...prefer to wait until I was sure the problem was serious enough to seek assistance.
- 16. ...think it is not a big deal because I know other women with this problem who have not sought treatment.
- 17. ...be afraid I am overreacting to a problem that is not that serious.
- 20. ...not think about seeking help since I have never heard about this problem.
- 21. ...prefer just to suck it up rather than dwell on my problems by going to a health professional.
- 25. ...consider this to be a minor problem that does not require treatment.

Shame

- 2. ...worry that the health professional would judge me negatively.
- 4. ...worry that others would find out about the problem if I told a health professional.
- 6. ...be afraid the health professional would not take my problem seriously.
- 7. ...worry that the health professional would think I am promiscuous (loose).
- 10. ...be afraid that I would be told my behavior had caused this problem.
- 18. ...be afraid the health professional might tell others about my problem.
- 22. ...not want to disclose personal information about myself to health professionals.
- 24. ...worry that a health professional would tell others about this problem of mine.
- 27. ...not want my problem discussed among other health professionals.

28. ...find it embarrassing to disclose to a health professional that I was having a problem with sex.

Fear of Severity

3. ...worry that the health professional might find I had a serious health problem.
8. ...worry that I would be told that I have a sexually transmitted infection.
11. ...feel uneasy about my partner knowing that I was having a problem serious enough to seek help.
12. ...be afraid of what the treatment for this problem might be.
14. ...be afraid that they might tell me there is no treatment or cure for it.
19. ...be afraid to find out that this problem may impact my ability to have children in the future.
23. ...be afraid that the treatment for this would involve my partner.
26. ...be afraid that the treatment for this would affect my relationship with my partner.

Table A9

Correlations for the SHTBS-Dysp Total Score, SHTBS-Dysp Subscales and the Somatosensory Amplification Scale (SSAS) (N=1034)

	1	2	3	4	5
1 SHTBS-Dysp Total	-				
2 Minimization	.80*	-			
3 Shame	.89*	.56*	-		
4 Fear of Severity	.82*	.44*	.66*	-	
5 Total SSAS	.14*	.13*	.11*	.11*	-

*p < .005, Bonferroni corrected alpha.

Table A10

Correlations for the SHTBS-Dysp Total Score and its Subscales and the Health Anxiety Questionnaire (HAQ) and its Subscales (N=1034)

	1	2	3	4	5	6	7	8	9
1 SHTBS-Dysp Total	-								
2 Minimization	.80*	-							
3 Shame	.89*	.56*	-						
4 Fear of Severity	.82*	.44*	.66*	-					
5 Total HAQ	.27*	.17*	.27*	.24*	-				
6 HAQ: Worry and Health Preoccupation	.25*	.16*	.25*	.23*	.94*	-			
7 HAQ: Fear of Illness and Death	.28*	.16*	.28*	.26*	.91*	.78*	-		
8 HAQ: Reassurance-Seeking Behavior	.11*	.08	.10	.11*	.73*	.63*	.54*	-	
9 HAQ: Extent to Which Symptoms Interfere With the Person's Life	.12*	.10*	.13*	.07	.47*	.36*	.28*	.26*	-

*p < .001, Bonferroni corrected alpha.

Table A11

Correlations for the SHTBS-Dysp Total Score and its Subscales and the Pain Catastrophization Scale (PCS) and its Subscales (N=1034)

	1	2	3	4	5	6	7	8
1 SHTBS-Dysp Total	-							
2 Minimization	.80*	-						
3 Shame	.89*	.56*	-					
4 Fear of Severity	.82*	.44*	.66*	-				
5 Total PCS	.27*	.18*	.16*	.27*	-			
6 PCS: Rumination	.21*	.14*	.16*	.24*	.92*	-		
PCS: Magnification	.30*	.21*	.27*	.28*	.84*	.67*	-	
8 PCS: Helplessness	.24*	.16*	.22*	.23*	.94*	.77*	.72*	-

*p < .002, Bonferroni corrected alpha.

Table A12

Correlations for the SHTBS-Dysp Total Score and its Subscales and the Mental Health Inventory (MHI) and its Subscales (N=1034)

	1	2	3	4	5	6	7	8	9
1 SHTBS-Dysp Total	-								
2 Minimization	.80*	-							
3 Shame	.89*	.56*	-						
4 Fear of Severity	.82*	.44*	.66*	-					
5 Total MHI	.27*	.26*	.23*	.17*	-				
6 Anxiety Subscale (MHA)	.24*	.22**	.20*	.16*	.81*	-			
7 Depression Subscale (MHD)	.27*	.25*	.24*	.18*	.85*	.67*	-		
8 Behavior Control Subscale (MHC)	.23*	.21*	.23*	.13*	.87*	.55*	.72*	-	
9 Positive Affect Subscale (MHP)	.11	.13*	.07	.06	.74*	.42*	.43*	.60*	-

*p < .001, Bonferroni corrected alpha.

Table A13
Means, Standard Deviations for SHTBS-Dysp Subscales and Total Score
as a Function of Group

Dependent Measure	<u>Dyspareunia</u> (N=102)		<u>Sexually Active</u> <u>Without Pain</u> (N=728)		<u>Sexually Inactive</u> (N=204)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Minimization	28.03 _a	7.55	25.35 _b	8.19	24.43 _b	8.10
Shame	23.74 _a	9.25	20.54 _b	8.66	22.91 _a	8.18
Fear of Severity	23.62 _{ab}	6.75	22.05 _b	7.19	23.97 _a	6.85
SHTBS-Dysp. Total Score	75.39 _a	18.79	67.94 _b	20.16	71.30 _{ab}	19.83

Means with differing subscripts within rows are significantly different at the $p < .05$ based on Scheffe' post hoc paired comparisons.

Table A14
Analyses of Variance of SHTSB-Dysp Subscales & Total Score as a Function of Group
(N=1034)

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>w²</u>
Minimization	2.00	896.66	448.33	6.82*	0.01
Shame	2.00	1560.33	780.17	10.49**	0.02
Fear of Severity	2.00	705.93	352.97	7.05*	0.01
SHTBS-Dysp. Total Score	2.00	5947.91	973.95	7.46*	0.01

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

Table A15
Means and Standard Deviations for Likelihood of Help Seeking Source (N=1034)

Dependent Measure	<u>M</u>	<u>SD</u>
Sex Therapist	2.18	1.22
Psychologist	1.93	1.08
Medical Doctor	4.05	1.07
Friend	3.05	1.31
Sex Partner	3.19	1.31
Relative(s)	2.19	1.22
Internet	3.63	1.30
Clergy Member	1.31	0.66

Table A16
Means & Standard Deviations for Likelihood of Help Seeking Source
as a Function of Group

Dependent Measure	<u>Dyspareunia</u> (N=102)		<u>Sexually Active</u> <u>Without Pain</u> (N=728)		<u>Sexually Inactive</u> (N=204)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Sex Therapist	2.26	1.29	2.16	1.23	2.18	1.14
Psychologist	2.20 _a	1.22	1.87 _b	1.07	2.02 _{ab}	1.03
Medical Doctor	3.74 _a	1.13	4.08 _b	1.06	4.08 _b	1.04
Friend	3.01	1.35	3.05	1.33	3.07	1.25
Sex Partner	3.05	1.36	3.25	1.31	3.05	1.26
Relative(s)	2.07 _a	1.22	2.14 _a	1.19	2.44 _b	1.31
Internet	3.60 _{ab}	1.44	3.70 _b	1.29	3.39 _a	1.24
Clergy Member	1.36	0.63	1.30	0.65	1.31	0.70

Means with differing subscripts within rows are significantly different at the $p < .05$ based on Scheffe' post hoc paired comparisons.

Table A17
Analysis of Variance of Likely Help Seeking Sources as a Function of Group (N=1034)

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>w²</u>
Sex Therapist	2.00	0.82	0.41	0.28	0.00
Psychologist*	2.00	11.73	5.87	5.07	0.01
Medical Doctor*	2.00	10.60	5.30	4.68	0.01
Friend	2.00	0.21	0.10	0.06	0.00
Sex Partner	2.00	8.81	4.40	2.59	0.01
Relative(s)*	2.00	15.83	7.91	5.36	0.01
Internet *	2.00	14.24	7.12	4.23	0.01
Clergy Member	2.00	0.38	0.19	0.43	0.00

*p<.05.

Appendix B

Female Sexual Function Index (FSFI)

INSTRUCTIONS: These questions ask about your sexual feelings and responses during the past 4 weeks. Please answer the following questions as honestly and clearly as possible. Your responses will be kept completely confidential. In answering these questions the following definitions apply:

Sexual activity can include caressing, foreplay, masturbation and vaginal intercourse.

Sexual intercourse is defined as penile penetration (entry) of the vagina.

Sexual stimulation includes situations like foreplay with a partner, self-stimulation (masturbation), or sexual fantasy.

CHECK ONLY ONE BOX PER QUESTION

Sexual desire or interest is a feeling that includes wanting to have a sexual experience, feeling receptive to a partner's sexual initiation, and thinking or fantasizing about having sex.

1. Over the past 4 weeks, how **often** did you feel sexual desire or interest?

- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?

- Very high
- High
- Moderate
- Low
- Very low or none at all

Sexual arousal is a feeling that includes both physical and mental aspects of sexual excitement. It may include feelings of warmth or tingling in the genitals, lubrication (wetness), or muscle contractions.

3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on")

during sexual activity or intercourse?

- No sexual activity
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?

- No sexual activity
- Very high
- High
- Moderate
- Low
- Very low or none at all

5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?

- No sexual activity
- Very high confidence
- High confidence
- Moderate confidence
- Low confidence
- Very low or no confidence

6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?

- No sexual activity
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?

- No sexual activity
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?

- No sexual activity
- Extremely difficult or impossible
- Very difficult
- Difficult
- Slightly difficult
- Not difficult

9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?

- No sexual activity
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

- No sexual activity
- Extremely difficult or impossible
- Very difficult
- Difficult
- Slightly difficult
- Not difficult

11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?

- No sexual activity
- Almost always or always

- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?

- No sexual activity
- Extremely difficult or impossible
- Very difficult
- Difficult
- Slightly difficult
- Not difficult

13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

- No sexual activity
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

- No sexual activity
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

- No sexual activity
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied

- Moderately dissatisfied
- Very dissatisfied

16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?

- No sexual activity
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?

- Did not attempt intercourse
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?

- Did not attempt intercourse
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?

- Did not attempt intercourse
- Very high
- High
- Moderate
- Low
- Very low or none at all

Appendix C

Socio-Demographic Questionnaire

1. How old are you? _____
2. With which of the following groups do you most identify? (Please check one)
 Caucasian or European-American
 Hispanic-American/Latina/Chicana
 Asian-American
 African-American
 American Indian/Native-American
 Pacific Islander-American
Other (Please specify): _____
3. Which of the following relationship situations best describes you? (Please check one)
 Single, not currently dating
 Single and currently dating
 Steady boyfriend
 Cohabiting or married
4. How many children do you have? None 1 2 3 or more
5. Have you ever had sexual intercourse? YES NO
6. How old were you when you had intercourse for the first time?
 Years old I have not yet had sexual intercourse

(If you have not yet had sexual intercourse, you can skip the rest of the questions on this questionnaire. If you have had sexual intercourse please proceed)

7. Do you regularly have pain with sexual intercourse? ___ YES ___ NO

(If your answer is NO to #6, you can skip the rest of the questionnaires. If you have pain with intercourse, please proceed)

8. When did intercourse start to become painful?

- a. ___ From the first time
- b. ___ After a few months
- c. ___ After a year or more

9. For how long have you had consistent pain with intercourse?

___ Years ___ Months

10. How often do you have pain with intercourse (Please check one)

___ Once in a while (less than 10% of the time)

___ Occasionally (about one time out of four – 25% of the time)

___ About half of the time (50% of the time)

___ Very often (75% of the time)

___ Almost always or always

Choose the words that describe your pain but do not select more than one word in a group.

Group 1

___ Flickering

___ Pulsing

___ Quivering

___ Throbbing

___ Beating

___ Pounding

Group 2

___ Jumping,

___ Flashing

___ Shooting

Group 3

___ Pricking

___ Boring

___ Drilling

___ Stabbing

Group 4

___ Sharp

___ Gritting

___ Lacerating

Group 5

___ Pinching

___ Pressing

___ Gnawing

___ Cramping

___ Crushing

Group 6

___ Tugging

___ Pulling

___ Wrenching

Group 7

___ Hot

___ Burning

___ Scalding

___ Searing

Group 8

___ Tingling

___ Itching

___ Smarting

___ Stinging

Group 9

___ Dull

___ Sore

___ Hurting

___ Aching,

___ Heavy

Group 10

___ Tender

___ Taunt

___ Rasping

___ Splitting

Choose the words that describe your pain but do not select more than one word in a group.

Group 11

___ Tiring

___ Exhausting

Group 12

___ Sickening

___ Suffocating

Group 13

___ Fearful

___ Frightful

___ Terrifying

Group 14

___ Punishing

___ Grueling

___ Cruel

___ Vicious

___ Killing

Group 15

___ Wretched

___ Binding

Choose the words that describe your pain but do not select more than one word in a group.

Group 16

___ Annoying

___ Troublesome

___ Miserable

___ Intense

___ Unbearable

Group 17

___ Spreading

___ Radiating

___ Penetrating

___Piercing

Group 18

___Tight

___Numb

___Squeezing

___Drawing

___Tearing

Group 19

___Cool

___Cold

___Freezing

Group 20

___Nagging,

___Nauseating

___Agonizing

___Dreadful

___Torturing

Group 21

___No pain

___Mild

___Discomforting

___Distressing

___Horrible

Excruciating

11. How distressing is this problem to you? (Please check one)

- Not at all
- Slightly
- Somewhat
- Very
- Extremely

12. Have you reported the problem to a health professional? YES NO

a. If so, what type of health professional? (Please check one)

- General medical doctor (family doctor)
- Obstetrician/Gynecologist (OBGYN)
- Nurse/Physician's assistant
- Psychotherapist/Counsellor/Sex therapist
- Physical Therapist
- Other (please specify): _____

13. Approximately how many times have you complained to a health professional about this problem (if you have spoken multiple times to one doctor, count those also)? _____

14. Approximately how many different doctors or health professionals have you seen about this problem? _____

15. Approximately how many different treatments or suggestions made by a doctor or health professional have you tried? _____

16. What type of treatment have you received? (Please check all that apply)

- Acupuncture
- Pain killers
- Anticonvulsants
- Antidepressants
- Antianxiety medications
- Biofeedback
- Couples therapy/Sex therapy
- Electrical stimulation

- Reducing contact with irritating substances, i.e., nylon panties, soaps, detergents, etc.)
- Individual Psychotherapy/Counseling
- Interferon injections
- Special diets
- Lubricants
- Physical therapy
- Surgery
- Anaesthetic creams (creams that numb the area)
- Vaginal dilation
- Sitz bath
- Antifungal creams (same as those used for yeast infections)
- Other creams (e.g. cortisone)
- Antifungal pills (e.g., Diflucan)

17. If you have consulted a doctor or another type of health professional for this problem, please rate how satisfied you have been with the care provided by the last health professional you consulted?

- Not at all satisfied
- Slightly satisfied
- Somewhat satisfied
- Moderately satisfied
- Very satisfied

Appendix D

Somatosensory Amplification Scale (SSAS)

On this questionnaire are groups of statements. Please read each group of statements carefully. Then check off the one statement in each group which best describes YOU IN GENERAL!

	Not at all true	A little bit true	Moderately true	Quite a bit true	Extremely true
1. I can't stand smoke, smog, or pollutants in the air.	1	2	3	4	5
2. I am often aware of various things happening within my body.	1	2	3	4	5
3. When I bruise myself, it stays noticeable for a long time.	1	2	3	4	5
4. I sometimes feel the blood flowing in my body.	1	2	3	4	5
5. Sudden loud noises really bother me.	1	2	3	4	5
6. I can sometimes hear my pulse or my heartbeat throbbing in my ear.	1	2	3	4	5
7. I hate to be too hot or too cold.	1	2	3	4	5
8. I am quick to sense the hunger contractions in my stomach.	1	2	3	4	5
9. Even something minor, like an insect bite or a splinter, really bothers me.	1	2	3	4	5
10. I can't stand pain.	1	2	3	4	5

Appendix E

Health Anxiety Questionnaire (HAQ)

This questionnaire is concerned with people's attitudes about their health. Some of the questions concern your bodily symptoms and feelings which can mean pains, aches, sickness, dizziness, breathing difficulties, tiredness, etc.

	Not at all or rarely	Sometimes	Often	Most of the time
1. Do you ever worry about your health?	0	1	2	3
2. Are you ever worried that you may get a serious illness in the future?	0	1	2	3
3. Does the thought of a serious illness ever scare you?	0	1	2	3
4. When you notice an unpleasant feeling in your body, do you tend to find it difficult to think of anything else?	0	1	2	3
5. Do you ever examine your body to find whether there is something wrong?	0	1	2	3
6. If you have an ache or pain, do you worry that it may be caused by a serious illness?	0	1	2	3
7. Do you ever find it difficult to keep worries about your health out of your mind?	0	1	2	3
8. When you notice an unpleasant feeling in your body, do you ever worry about it?	0	1	2	3
9. When you wake up in the morning do you find you very soon begin to worry about your health?	0	1	2	3
10. When you hear of a serious illness or death of someone you know, does it ever make you more concerned about your own health?	0	1	2	3

Appendix E (con't)

	Not at all or rarely	Sometimes	Often	Most of the time
11. When you read or hear about an illness on TV or radio, does it ever make you think you may be suffering from that illness?	0	1	2	3
12. When you experience unpleasant feelings in your body do you tend to ask friends or family about them?	0	1	2	3
13. Do you tend to read up about illness and diseases to see if you may be suffering from one?	0	1	2	3
14. Do you ever feel afraid of news that reminds you of death (such as funerals, obituary notices)?	0	1	2	3
15. Do you ever feel afraid that you may die soon?	0	1	2	3
16. Do you ever feel afraid that you may have cancer?	0	1	2	3
17. Do you ever feel afraid that you may have heart disease?	0	1	2	3
18. Do you ever feel afraid that you may have any other serious illness?	0	1	2	3
19. Have your bodily symptoms stopped you from working during the past six months or so?	0	1	2	3
20. Do your bodily symptoms stop you from concentrating on what you are doing?	0	1	2	3
21. Do your bodily symptoms stop you from enjoying yourself?	0	1	2	3

Appendix F

Pain Catastrophizing Scale (PCS)

Think about past painful experiences and indicate how much you experienced each of the following thoughts or feelings.

	Not at all	To a slight degree	To a moderate degree	To a great degree	All the time
1. I worry all the time about whether the pain will end.	0	1	2	3	4
2. I feel I can't go on.	0	1	2	3	4
3. It's terrible and I think it is never going to get any better.	0	1	2	3	4
4. It's awful and I feel that it overwhelms me.	0	1	2	3	4
5. I feel I can't stand it anymore.	0	1	2	3	4
6. I become afraid that the pain may get worse.	0	1	2	3	4
7. I think of other painful experiences.	0	1	2	3	4
8. I anxiously want the pain to go away.	0	1	2	3	4
9. I can't seem to keep it out of my mind.	0	1	2	3	4
10. I keep thinking about how much it hurts.	0	1	2	3	4
11. I keep thinking about how badly I want the pain to stop.	0	1	2	3	4
12. There is nothing I can do to reduce the intensity of the pain.	0	1	2	3	4
13. I wonder whether something serious may happen.	0	1	2	3	4

Appendix G

Mental Health Inventory (MHI)

For each question, choose only one answer.

How much of the time, during the <u>past month</u>.	All	Most	A good bit	Some	A little bit	None
1. Has your daily life been full of things that were interesting to you?						
2. Did you feel depressed?						
3. Have you felt loved and wanted?						
4. Have you been a very nervous person?						
5. Have you been in firm control of your behavior, thoughts, emotions, and feelings?						
6. Have you felt tense or high-strung?						
7. Have you felt calm and peaceful?						
8. Have you felt emotionally stable?						
9. Have you felt downhearted and blue?						
10. Were you able to relax without difficulty?						

Appendix G (con't)

How much of the time, during the past month.	All	Most	A good bit	Some	A little bit	None
11. Have you felt restless, fidgety, or impatient?						
12. Have you been moody, or brooded about things?						
13. Have you felt cheerful, light-hearted?						
14. Have you been in a low or very low spirits?						
15. Were you a happy person?						
16. Did you feel you had nothing to look forward to?						
17. Have you felt too down in the dumps that nothing could cheer you up?						
18. Have you been anxious or worried?						

Appendix H

Demographic Information

1. How old are you ? _____

2. With which of the following groups do you most identify? (Please check one.)

 African American

 American Indian/Native American

 Asian American

 EuroAmerican (Caucasian)

 Hispanic American

 Pacific Islander-American

Other: _____

3. Which of the following relationship situations best describes you?
(Please check one.)

 Single, not currently dating

 Single and currently dating

 Steady boyfriend

 Cohabiting or married

4. How many children do you have? _____

5. Have you ever had sexual intercourse?

Yes

No

6. How old were you when you had intercourse for the first time? _____

7. Over the past 4 weeks, how often did you experience discomfort or pain during vaginal penetration?

Did not attempt intercourse.

Almost always or always

Most times (more than half the time)

Sometimes (about half the time)

A few times (less than half the time)

Almost never or never

8. Over the past 4 weeks, how often did you experience discomfort or pain following vaginal penetration?

Did not attempt intercourse.

Almost always or always

Most times (more than half the time)

Sometimes (about half the time)

A few times (less than half the time)

Almost never or never

9. Over the past 4 weeks, how would you rate your level (degree) of discomfort during or following vaginal penetration?

Did not attempt intercourse.

___ Very high

___ High

___ Moderate

___ Low

___ Very low or none at all

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Donaldson, R. & Meana, M. (2011). Early dyspareunia experience in young women: Confusion, consequences, and help-seeking barriers. *The Journal of Sexual Medicine*, 8(3), 814-823.

Dissertation Title: To Consult or Not To Consult? Investigating Dyspareunia Barriers to Treatment-Seeking in Young Women

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