

Psychological and Interpersonal Dimensions of Sexual Function and Dysfunction



Lori Brotto, PhD,¹ Sandrine Atallah, MD,² Crista Johnson-Agbakwu, MD,³ Talli Rosenbaum, MSc,⁴ Carmita Abdo, PhD,⁵ E. Sandra Byers, PhD,⁶ Cynthia Graham, PhD,⁷ Pedro Nobre, PhD,⁸ and Kevan Wylie, MD⁹

ABSTRACT

Introduction: Psychological, interpersonal, and sociocultural factors play a significant role in making one vulnerable to developing a sexual concern, in triggering the onset of a sexual difficulty, and in maintaining sexual dysfunction in the long term.

Aim: To focus on psychological and interpersonal aspects of sexual functioning in women and men after a critical review of the literature from 2010 to the present.

Methods: This report is part 1 of 2 of our collaborative work during the 2015 International Consultation on Sexual Medicine for Committee 2.

Main Outcome Measures: Systematic review of the literature with a focus on publications since 2010.

Results: Our work as sexual medicine clinicians is essentially transdisciplinary, which involves not only the collaboration of multidisciplinary professionals but also the integration and application of new knowledge and evaluation and subsequent revision of our practices to ensure the highest level of care provided. There is scant literature on gender non-conforming children and adolescents to clarify specific developmental factors that shape the development of gender identity, orientation, and sexuality. Conversely, studies consistently have demonstrated the interdependence of sexual function between partners, with dysfunction in one partner often contributing to problems in sexual functioning and/or sexual satisfaction for the other. We recommend that clinicians explore attachment styles of patients, childhood experiences (including sexual abuse), onset of sexual activity, personality, cognitive schemas, infertility concerns, and sexual expectations. Assessment of depression, anxiety, stress, substance use and post-traumatic stress (and their medical treatments) should be carried out as part of the initial evaluation. Clinicians should attempt to ascertain whether the anxiety and/or depression is a consequence or a cause of the sexual complaint, and treatment should be administered accordingly. Cognitive distraction is a significant contributor to sexual response problems in men and women and is observed more consistently for genital arousal than for subjective arousal. Assessment of physical and mental illnesses that commonly occur in later life should be included as part of the initial evaluation in middle-aged and older persons presenting with sexual complaints. Menopausal status has an independent effect on reported changes in sex life and difficulties with intercourse. There is strong support for the use of psychological treatment for sexual desire and orgasm difficulties in women (but not in men). Combination therapies should be provided to men, whenever possible.

Conclusion: Overall, research strongly supports the routine clinical investigation of psychological factors, partner-related factors, context, and life stressors. A biopsychosocial model to understand how these factors predispose to sexual dysfunction is recommended.

J Sex Med 2016;13:538–571. Copyright © 2016, International Society for Sexual Medicine. Published by Elsevier Inc. All rights reserved.

Key Words: Psychological; Interpersonal; Treatment Outcome; Partner Factors; Contextual Factors

Received December 27, 2015. Accepted January 19, 2016.

¹Department of Obstetrics/Gynaecology, University of British Columbia, Vancouver, BC, Canada;

²Clinique du Levant, Beirut, Lebanon;

³Obstetrics and Gynecology, Maricopa Integrated Health System, Phoenix, AZ, USA;

⁴Haziporen 10bet, Bet Shemesh, Israel;

⁵Department of Psychiatry, University of Sao Paulo Medical School, Sao Paulo, Brazil;

⁶Department of Psychology, University of New Brunswick, Fredericton, NB, Canada;

⁷Department of Psychology, University of Southampton, Southampton, UK;

⁸Departamento de Ciências da Educação, Universidade de Aveiro, Senhora da Hora, Portugal;

⁹Sexual Medicine, Porterbrook Clinic, Sheffield, UK

Copyright © 2016, International Society for Sexual Medicine. Published by Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jsxm.2016.01.019>

RECOMMENDATIONS

Constitutional and Developmental Factors

Constitutional Factors

- Adopt a biopsychosocial model in assessment (recommendation = grade C).
- Provide early assessment of patients with hypospadias (recommendation = grade B).
- Provide ongoing assessment of all patients with constitutional contributors (recommendation = grade C).
- Provide psychological support as an integral part of management (of sexual health and quality of life) in patients with constitutional contributors (recommendation = grade C).

Developmental Factors

Conduct research with and for gender non-conforming children and adolescents to clarify specific developmental factors that organize youth's gender identity, orientation, and sexuality (recommendation = research principle).

- Explore attachment styles of patients presenting with sexual difficulties (recommendation = grade C).
- Evaluate sexual anxiety and fear of intimacy associated with childhood experiences (recommendation = grade C).
- Assess relevant childhood experiences that might be linked to risk or resiliency (recommendation = grade C).
- Differentiate between event-based trauma and process-based trauma (recommendation = grade C).
- Assess childhood sexual history including abuse (recommendation = grade B).
- Assess multiple aspects of sexual functioning, such as sexual self-esteem and sexual satisfaction (recommendation = grade C).

Take a developmental approach to assessing onset of sexual activity and assess non-partnered and partnered experiences, the context of those experiences, and associated beliefs and emotions and attempt to explore their possible role in current sexual function and behavior (recommendation = grade C).

Conduct scientific work on resilience to fully understand the psychopathology of sexual dysfunction and to develop interventions that decrease risk factors and in turn bolster resilience (recommendation = research principle).

Systematically evaluate developmental and constitutional factors that could have negatively affected sexual function in patients complaining of sexual dysfunction (recommendation = grade C).

Individual Trait Factors

General Trait Factors

Clinicians should be aware of the role of personality factors during the assessment and treatment of sexual disorders (recommendation = grade B).

Address cognitive schemas during clinical assessment and use cognitive restructuring techniques aimed at changing cognitive schemas (recommendation = grade A).

Specific (Sexual) Trait Factors

- Assess sexual excitation and sexual inhibition during clinical assessment of sexual dysfunctions (recommendation = grade C).
- Address sexual beliefs during assessment and treatment of sexual dysfunctions (recommendation = grade B).

Life-Stage Factors

Infertility and Postpartum Period

- Assess sexual function and satisfaction during all phases of infertility diagnosis when possible (recommendation = grade C).
- Assess sexual function and satisfaction during the postpartum period when possible (recommendation = grade B).

Aging

- Sexual health issues should be discussed with older patients (recommendation = grade A).
- Assessment of physical and mental illnesses that commonly occur in later life should be included as part of the initial evaluation in middle-aged and older persons presenting with sexual complaints (recommendation = grade A).
- Assess adverse life events in older patients presenting with sexual dysfunctions, including evaluation of resulting anxiety and depressive symptoms (recommendation = grade A).

Clinicians should be aware of the relation between symptoms of aging and psychological health in older men and request further investigation when needed (recommendation = grade A).

Menopause

Initiate routine clinical investigation of psychological factors and life stressors of menopausal women (recommendation = grade A).

Address contextual factors that can precipitate and maintain sexual difficulties, including relationship quality, sexual experience, previous sexual function, and mental and physical health of menopausal women (recommendation = grade A).

Consider the potential role of partners in the etiology and maintenance of female sexual dysfunction (recommendation = grade B).

Psychological Processing Factors

Causal Attribution to Negative Sexual Events

Research supports the role of attributional style in the etiology of sexual dysfunction. Clinicians should address patients' causal attributions to sexual problems (recommendation = grade B).

Efficacy Expectations

Assess the presence and potential role of negative and positive efficacy expectations regarding sexual performance (recommendation = grade A).

Cognitive Distraction and Attentional Focus

Evaluate the role of cognitive distraction on sexual dysfunction during assessment and use treatment strategies aimed at decreasing cognitive distraction (recommendation = grade A).

Assess systematically the content of thoughts patients report during sexual activity (recommendation = grade A).

Anxiety and Low Mood

Assess for the presence and role of state anxiety during sexual activity (recommendation = grade B).

Research suggests that low mood is strongly associated with sexual response and sexual functioning in men and women. Clinicians should address patients' mood states related to sexual activity (recommendation = grade B).

Comorbid Mental Health Issues

Stress

Assess for the presence of stress, including daily hassles and critical life events, when assessing patients' sexual function and satisfaction and quality of marital relationship (recommendation = grade A).

Depression

In the context of depression, sexual symptoms, satisfaction, and distress should be assessed; similarly, in the presence of sexual difficulties, depressed mood should be assessed (recommendation = grade A).

Anxiety Disorders

Assessment of anxiety disorders should be carried out as part of the initial evaluation in individuals presenting with sexual complaints (recommendation = grade A).

The role of antidepressants and antianxiety medications as contributory factors to sexual dysfunction should be evaluated (recommendation = grade C).

Post-Traumatic Stress Disorder

Assess for the presence of post-traumatic stress disorder (PTSD) symptoms when evaluating sexual function in men and women. Treatment recommendations for men and women who experience a traumatic event should include screening for sexual dysfunction (recommendation = grade A).

Substance Use Disorder and Medication

Assess for the use and abuse of alcohol, nicotine, and other drugs in patients presenting with sexual concerns (recommendation = grade B).

Interpersonal and Relationship Factors

Relationship Factors

Studies consistently demonstrate the interdependence of sexual function between partners. Clinicians should take a biopsychosocial approach to the assessment and treatment of sexual dysfunctions and include evaluation of the partners when possible (recommendation = grade B).

When one partner has an illness that affects sexual functioning, the two partners should be involved in assessment and treatment (recommendation = grade B).

Dyadic factors and relationship quality should be addressed in sex therapy (recommendation = grade B).

For people in a romantic relationship, the partner should be included in the treatment of any sexual dysfunction (recommendation = grade B).

Psychological Treatment Outcome

Methodologic Issues

Some newer approaches (eg, Internet-based therapies) require careful consideration of the choice of treatment outcome assessments (recommendation = expert opinion).

There is a need to develop psychometrically valid sexual function assessments for gay, lesbian, bisexual, transgender, and queer individuals (recommendation = research principle).

More research is needed to identify prognostic indicators of treatment success (eg, individual and interpersonal factors; recommendation = grade B).

Sexual Desire Problems in Women

Clinicians should use cognitive-behavioral therapy (CBT) in the treatment of women with low sexual desire (recommendation = grade A).

Clinicians should consider mindfulness-based therapy for women with low sexual desire (recommendation = grade B).

Whenever possible, clinicians should use couple- or group-based therapy (recommendation = grade A).

Female Orgasmic Disorder

Clinicians should use CBT for women with anorgasmia (recommendation = grade A).

Although the coital alignment technique is often used for women who wish to become orgasmic during vaginal penetration with intercourse, only one study has evaluated the effectiveness of this method (recommendation = expert opinion).

Erectile Dysfunction

Group or couple therapy, whenever possible, should be used over individual therapy for men with erectile dysfunction (ED; recommendation = grade A).

Clinicians should use CBT for men with ED (recommendation = grade A).

Based on findings of better efficacy with combined psychological interventions and medical treatment over medical treatment alone, we recommend clinicians use psychological interventions to supplement medical treatment (recommendation = grade A).

Premature Ejaculation

Clinicians should consider psychological or behavioral interventions in the treatment of men with premature ejaculation (PE) and/or use psychological or behavioral interventions to supplement medical treatment of PE (recommendation = expert opinion).

Delayed Ejaculation

Clinicians should consider psychological or behavioral interventions in the treatment of men with delayed ejaculation (DE) and/or use psychological or behavioral interventions to supplement medical treatment of DE (recommendation = expert opinion).

Hypoactive Sexual Desire Disorder in Men

Clinicians should consider psychological or behavioral interventions in the treatment of men with hypoactive sexual desire disorder (HSDD; as defined by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [DSM-IV]*) and/or use psychological or behavioral interventions to supplement medical treatment of HSDD (recommendation = expert opinion).

Integrated Treatments

We recommend that health care providers approach the management of sexual dysfunction with combination or integrated treatments whenever possible (recommendation = grade A).

INTRODUCTION

This article focuses on psychological and interpersonal aspects of sexual functioning in women and men. The focus is on the empirical literature that has been published since the 2009 International Consultation on Sexual Medicine.¹ Even in the advent of significant advances in neurobiological factors contributing to sexual function and dysfunction, psychological, interpersonal, and sociocultural factors play a significant role in making one vulnerable to developing a sexual concern (eg, lack of accurate sexual knowledge), in triggering the onset of a sexual difficulty (eg, a period of stress), and in maintaining sexual dysfunction in the long term (eg, ongoing concerns about partner evaluation and associated anxiety). Importantly, however, absence of sexual dysfunction does not necessarily guarantee that one is sexually satisfied, and presence of sexual concerns does not imply sexual dissatisfaction. Thus, it is important to bear in mind that although the focus of this article is on sexual function and dysfunction, the clinician should be mindful of inquiring about the individual's level of experienced sexual satisfaction or dissatisfaction and explore how these might or might not be related to sexual symptoms.

This chapter is focused on the recent (6-year) literature on the etiology and psychological treatments for sexual difficulties in women and men. The section on etiology summarizes the recent literature on individual factors (including constitutional and developmental factors, trait factors, life-stage stressors, processing factors, and contextual factors) and interpersonal and relational factors. A companion article focuses on sociocultural and ethical factors. Our review of the psychological treatment outcome literature covers methodologic limitations inherent to this literature and then provides a review of recent outcome research testing psychological treatments for sexual difficulties in women and men. This article also reviews recent advances, such as integrating psychological and medical approaches, and novel methods of delivering treatment, such as online and Internet therapies.

Our work as sexual medicine clinicians is essentially transdisciplinary, which involves not only the collaboration of multidisciplinary professionals but also the integration and application of new knowledge and collaborative evaluation and subsequent revision of our practices to ensure the highest level of care provided.

ETIOLOGY

Individual Factors

Constitutional Factors

Constitutional factors are innate biological risk factors that contribute to the development of sexual dysfunction. Recommendations based on our review appear at the start of this article, and a more exhaustive review of the literature on constitutional factors is presented in Table 1.

Adults with disorders of sex development have more sexual and relationship difficulties than adults without disorders of sex development,² although the level of impact depends on the type of medical and surgical procedures performed during childhood.^{3–5}

There is a high incidence of erectile and ejaculatory difficulties in men with hypospadias⁶ and impaired erectile function in men with congenital penile deviation.^{7,8} Other congenital disorders (eg, spina bifida⁹ and Turner syndrome^{10,11}) also can impair adult sexual function and satisfaction.

The adoption of a biopsychosocial model to understand how constitutional factors and disorders of sex development predispose to sexual dysfunction is recommended (recommendation = grade C). Early assessment of patients with hypospadias (recommendation = grade B) and ongoing assessment of all patients with constitutional contributors (recommendation = grade C) are essential for long-term follow-up and psychosexual counseling. Psychological support should be an integral part of management (recommendation = grade C).

Developmental Factors

Recommendations based on our review of developmental factors appear at the start of this article and a more exhaustive review of the literature on developmental factors is presented in Table 1. Here we cover gender identity development, attachment, non-sexual and sexual abuse, puberty/adolescence, and vulnerability and risk factors.

1. Gender Identity Development. Gender conformity is an early developmental predictor for adolescent heterosexuality.^{1,12} Gender non-conforming boys are more likely to later identify as gay than gender non-conforming girls.^{1,13} Sexual-questioning children have a lower self-concept and fewer same-sex-typed attributes than children who are more at ease with their heterosexuality.¹⁴ However, longitudinal studies have shown that not all childhood gender dysphoria is associated with a transgender outcome.¹⁵

Further research needs to be conducted with gender non-conforming children and adolescents to clarify specific developmental factors that shape the development of gender identity, orientation, and sexuality (recommendation = research principle).

2. Problematic Attachment and Experience With Parents or Parental Surrogates. Problematic attachment has been cited as a contributing factor in adolescent sexual offending behavior,^{16,17} gender identity development,^{18,19} sexually compulsive behaviors,²⁰ and child sexual abuse.²¹ It is recommended that clinicians explore attachment styles of patients presenting with sexual disorders (recommendation = grade C) and assess relevant childhood experiences that might be linked to risk or resiliency (recommendation = grade C).

3. Exposure to Childhood Non-Sexual Abuse and Neglect. Studies have found an association between childhood abuse or neglect and later female sexual dysfunctions, in particular low desire and sexual aversion,^{22,23} although no relation between physical abuse in childhood and subsequent vaginismus²⁴ or dyspareunia²⁵ has been found.

Table 1. Summary of Studies (since 2010) About the Impact of Constitutional and Developmental Factors on Sexual Function in Men and Women

Study	n	Methodology	Results	LE
Jürgensen et al, ² 2013	66 adolescents, 110 adults	For examination of psychosexual development of 66 adolescents and 110 adults with DSD, the investigators used the Utrecht Gender Dysphoria Scale for adolescents, the Questionnaire of Gender Identity for adults, and a condition-specific DSD study questionnaire. Individuals were analyzed in 4 subgroups reflecting karyotype, absence or presence of androgen effects, and gender of rearing.	Partnership and sexuality were identified as difficult areas of life in individuals with DSD. Adolescents and adults with DSD reported fewer experiences regarding love or sexual relationships compared with unaffected individuals.	3
Kiss et al, ³⁴⁶ 2011	104	Cross-sectional study of 104 men (24–42 y old) who underwent uncomplicated 2-stage hypospadias repair in their childhood and 63 age-matched healthy men without genital malformations and completed a 15-item questionnaire regarding psychosexual well-being and penile appearance.	Subjects with hypospadias repair were less satisfied with their genital appearance; however, they were more satisfied with their sex lives compared with healthy controls. Results showed a significant difference between the 2 groups in almost all psychological outcome measurements.	2
Callens et al, ³⁴⁷ 2013	—	Literature review. PubMed search for relevant publications (1955–2012) on the role of hormonal and surgical treatment in sexual QoL in adult men with micro-penis.	It was difficult to draw firm conclusions that fit all patients in this disparate population. The literature review supports the conclusions that (i) male gender assignment is preferable for most 46,XY infants with congenital micro-penis because of the likelihood of male gender development and genital and sexual function; (ii) small penis persisting into adulthood and dissatisfaction with genital appearance jeopardize sexual QoL; (iii) there is no known intervention, apart from phalloplasty, to guarantee that the penis will become normal in size; (iv) early data suggest that the phalloplasty technique is considered the gold standard for gender reassignment in the transgender population and can be transferred to 46,XY patients with micro-penis.	4
Schönbucher et al, ³⁴⁸ 2012	46	47 persons with 46,XY DSD (17–60 y old) were examined by questionnaire on various aspects of sexual QoL. Scores were compared with those of a non-clinical convenience sample consisting of 145 women. Data were analyzed separately for diagnostic subgroups. Furthermore, persons whose external genitalia had been surgically corrected were compared with persons whose genitalia had been left unaltered.	Compared with the nonclinical group, persons with 46,XY DSD more often had no partner, felt more insecure in social and sexual situations, had more sexual problems, and were less satisfied with overall sex life and sexual function. Participants who underwent genital surgery showed less dyspareunia but more fear of injuries during intercourse than those whose genitals were left unaltered.	2

(continued)

Table 1. Continued

Study	n	Methodology	Results	LE
Tal et al, ⁸ 2010	32	Prospective, longitudinal, uncontrolled study of 32 men undergoing penile reconstructive surgery for CPD. Assessment of change in sexual relationship, confidence, self-esteem, and sexual function scores.	Penile reconstructive surgery for CPD was associated with significant improvements in overall relationship, sexual relationship, confidence, libido, and satisfaction, as reflected by higher scores in 3 of the 4 domains of the SEAR questionnaire and improvements in 2 of the 4 domains of the IIEF.	3
Gender identity development Pauletti et al, ³⁴⁹ 2014	195	Data were gathered from 195 boys and girls (mean age = 10.1 yr) in the fall and spring of a school year. Children self-reported multiple dimensions of gender identity (intergroup bias, pressure for gender differentiation, gender typicality, gender contentedness); peers assessed each other's social behavior (gender nonconformity, aggression toward each classmate). Using multilevel modeling, the study examined how children's attacks on gender-nonconforming peers (vs their attacks on other peers) changed over the school year depending on their gender identity.	There was modest support for the hypothesis that overconfident, arrogant gender identity promotes abuse of gender-atypical peers but considerable support for the hypothesis that insecure, self-questioning gender identity fosters this tendency.	3
Problematic attachment and experience with parents or parental surrogates Rajkumar et al, ³⁵⁰ 2015	46	Case records of 46 men who presented to a clinic for psychosexual disorders in 2012–2013 and were diagnosed with psychogenic ED using a semi-structured interview schedule were reviewed.	Disrupted childhood attachment was common in the sample of men with ED and was associated with significant differences in their clinical profile, particularly an earlier onset, a lower likelihood of being married, and higher rates of performance anxiety.	3
Exposure to childhood non-sexual abuse and neglect Leclerc et al, ²⁵ 2010	151	151 women underwent a standardized gynecologic examination and a structured interview to confirm the diagnosis of dyspareunia. They also completed self-report questionnaires investigating past sexual and physical abuse, in addition to current pain, psychosocial adjustment, and sexual functioning.	Results showed that a history of sexual abuse involving penetration was associated with poorer psychological adjustment and sexual functioning. Also, findings showed that women who perceived a link between their dyspareunia and their past sexual abuse reported worse sexual functioning than those who did not. The experience of sexual abuse was not associated with pain intensity and physical abuse was not associated with any of the outcome measurements.	3

(continued)

Table 1. Continued

Study	n	Methodology	Results	LE
Heywood et al, ⁴³ 2014	—	Literature review identified and synthesized published literature on the association between early first SI and later sexual and reproductive outcomes. Literature searches were conducted in Medline, Embase, PsycINFO, and Current Contents. In all, 65 citations met the selection criteria (industrialized, population-based studies).	The most common sexual behavior investigated was sexual partners. Studies consistently associated early first intercourse with more recent, lifetime, and concurrent sexual partners. Early initiators also were more likely to participate in a wider range of sexual practices and report increased sexual satisfaction (among men).	4
Reissig ³⁵ et al, 2012	475	Retrospective study examined contextual factors of first intercourse, affective salience of the experience, possible effects on sexual attitudes and beliefs, and subsequent sexual development and adjustment in a sample of 475 young adults.	Young men and women experienced intercourse for the first time at approximately 17 y old, were in a committed relationship, and reported positive affective responses. Affective reactions to the first sexual experience of intercourse, sexual self-efficacy, sexual aversion, and age at first intercourse affected individuals' current sexual adjustment; however, only sexual self-efficacy mediated between first intercourse and current sexual adjustment in young men and women. Older age at first intercourse was associated with less sexual self-efficacy and lower current sexual adjustment for women.	3
Bauman et al, ³⁵² 2011	4388	Data were drawn from the 2002 Swiss Multicenter Adolescent Survey on Health database, a nationally representative cross-sectional survey including 7429 adolescents in post-mandatory school-age years (16–20). Only adolescents reporting SI were included ($n = 4,388$; 45% women) and categorized by age of onset of SI (early initiators, <16 y old, $n = 1,469$, 44% girls; late initiators, ≥ 16 y old, $n = 2,919$, 46% women). Analyses were done separately by gender. Groups were compared for personal characteristics at the bivariate level.	After adjusting for YSSI instead of age, negative sexual outcomes in early initiators were no longer significant, except for multiple sexual partners in women, although at a much lower level. Early initiators were less likely to report condom non-use at last SI when adjusting for YSSI.	3
Rapsey, ⁴⁷ 2014	388	Data from 388 questionnaires were gathered from students 17–21 y old living in accommodation halls and by postal invitation to adults 25–35 y old.		

CPD = congenital penile deviation; DSD = disorders of sex development; ED = erectile dysfunction; IIEF = International Index of Erectile Function; LE = level of evidence; QoL = quality of life; SEAR = self-esteem and relationship questionnaire; SI = sexual intercourse; YSSI = years since onset of sexual intercourse.

A study on men who have sex with men has reported an association between physical and sexual childhood abuse and an augmented risk of ED and sexual problems caused by a medical condition.²⁶

It is recommended that clinicians assess childhood experiences in patients presenting with sexual dysfunctions, including evaluation of resulting sexual anxiety and fear of intimacy (recommendation = grade C), and differentiate between event-based trauma and process-based trauma (recommendation = grade C).

4. Experience of Childhood Sexual Abuse. Women with a history of childhood sexual abuse (CSA) are more likely to engage in risky sexual behaviors, to have sexual problems, and to experience sexual re-victimization in adulthood.^{27–30} Experience of CSA involving attempted or completed penetrative sex has been associated with worse sexual outcomes than CSA involving sexual touching only.²⁸

Men with a history of CSA, particularly those who experienced penetrative CSA, also are more likely to experience sexual problems and engage in risky sexual behavior.^{27,29,31–34}

Berthelot et al³⁵ reported that more than half the women and more than a third the men attending clinics with sexual problems had experienced CSA. However, not all individuals who experienced CSA have poorer sexual functioning in adulthood; characteristics of the abuse and family dynamics influence the extent to which CSA affects later sexual functioning.^{28,29,36,37}

It is recommended that clinicians assess childhood sexual history, including whether clients have experienced CSA and, if so, its characteristics (eg, frequency and duration) and whether the perpetrator was known or unknown (recommendation = grade B). Clinicians should assess multiple aspects of sexual functioning, including, but not limited to, subjective aspects such as sexual self-esteem and sexual satisfaction (recommendation = grade C).

5. Puberty, Adolescence, and Early Sexual Experiences. Boys with an earlier onset of puberty tend to have higher sexual desire and more frequent sexual activity as adults.³⁸ In girls, puberty seems to have less impact on sexual interest and response.^{38,39}

A consistent finding is that boys start masturbating earlier and masturbate more frequently than girls.^{14,40,41} Among women, masturbation in childhood and adolescence has been associated with more satisfying sexual experiences, better body image, and more positive sexual self-esteem.⁴¹ Girls with negative or indifferent views about masturbation are more likely to report negative experiences of their first sexual experience.⁴²

Early sexual debut is associated with more recent, lifetime, and concurrent sexual partners in men and women.⁴³ Among men and women, early initiators report higher sexual satisfaction than later initiators.^{44,45} Independently of gender, negative first experiences and less stable relationships at the onset of sexual activity contribute more to later sexual difficulties than the age of initiation.^{46,47}

Our recommendation is that clinicians take a developmental approach to assessing onset of sexual activity and assess non-partnered and partnered experiences, the context of those experiences, and any associated beliefs and emotions and attempt to explore their possible role in the individual's current sexual function and behavior (recommendation = grade C).

6. Vulnerability and Risk Factors. Vulnerability can be defined as the increased likelihood of developing a particular disorder among individuals possessing certain susceptibilities or exposed to certain environmental factors, whereas resilience decreases this likelihood. We have very little understanding of these vulnerability and protective mechanisms in relation to sexual functioning.

More research on resilience is needed to develop interventions that decrease risk factors and in turn bolster resilience (recommendation = research principle). In patients with sexual dysfunction, a systematic evaluation of developmental and constitutional factors that could have negatively affected sexual function is recommended (recommendation = grade C).

TRAIT FACTORS

General Trait Factors

Personality and Other General Traits

Neuroticism has been related to sexual performance anxiety and ED in men^{48,49} and to global sexual functioning,⁵⁰ sexual arousal,⁵¹ and orgasmic difficulties^{51,52} in women. In a sample of gay, lesbian, bisexual, and transgender men and women, those with sexual problems scored higher on neuroticism compared with healthy controls.⁵³

Extraversion is associated with higher levels of sexual functioning and sexual satisfaction in men and women.^{49,50,52,54,55} Women with sexual dysfunction also have lower levels of positive trait affect compared with healthy controls.⁵⁶

These findings suggest that neuroticism, introversion, and low positive trait affect could play a role in predisposing men and women to develop sexual dysfunction. We recommend that clinicians explore the role of personality factors during the assessment and treatment of sexual disorders (recommendation = grade B).

Cognitive Schemas

Cognitive schemas are ideas about the self, others, and the future that are responsible for the meaning individuals assign to their current or past experiences.⁵⁷ Individuals with sexual dysfunction activate significantly more negative cognitive schemas in response to adverse sexual episodes.^{58–61}

Experimental studies in women have associated induced positive schemas with higher subjective and genital sexual arousal and positive affect compared with induced negative schema.^{62,63}

Women with negative sexual self-schemas report lower interest in sexual activity, fewer sexual thoughts, and lower sexual arousal than women with more positive sexual self-schema.⁶⁴ Men with negative sexual schemas tend to report low arousability levels.⁶⁵ In addition, sexual self-schemas predict sexual functioning^{66,67} and satisfaction in women.^{66,67}

Studies have shown a clear role of cognitive schemas in predicting sexual dysfunction. It is recommended that clinicians address cognitive schemas during clinical assessment and, when relevant, use cognitive restructuring techniques aimed at changing cognitive schemas (recommendation = grade A).

Specific (Sexual) Trait Factors

Sexual Inhibition/Excitation

The dual control model proposes that sexual response results from a balance between relatively independent inhibitory and excitatory mechanisms^{68–70} and that individuals with higher levels of sexual inhibition (SI) and lower levels of sexual excitation (SE) are more vulnerable to sexual difficulties.

Studies have supported these predictions. Men with ED scored lower on SE and higher on SI due to threat of performance failure compared with sexually healthy men.⁷¹ In a study of newlywed couples, SI owing to performance failure was the best predictor of male erectile problems.⁷² Among heterosexual women, SI scores were positively associated with the likelihood of reporting sexual problems.^{73,74}

Findings suggest that SE and SI propensities are associated with sexual functioning in men and women. It is recommended that clinicians assess SE and SI during clinical assessment of sexual dysfunctions (recommendation = grade C).

Sexual Beliefs

Sexual myths (eg, “a real man is always ready for sex”) are more commonly endorsed by men with sexual problems than by healthy controls.⁷⁵ In women, body image beliefs are strongly associated with female orgasmic disorders.⁷⁶ Age-related beliefs are common in women with vaginismus⁷⁶ and conservative sexual beliefs are strongly related to low desire^{77,78} and vaginismus.⁷⁹

Research suggests that sexual beliefs can play a role as predisposing and maintaining factors of sexual dysfunction in men and women. It is recommended that clinicians address sexual beliefs during assessment and treatment (recommendation = grade B).

Life-Stage Stressors

Infertility

Impairment in sexual functioning, satisfaction, and sexual self-esteem have been associated with infertility,^{80–83} with women more frequently affected than men.^{84–86} PE, ED, anxiety, and depression are significantly more common in infertile men than in those without fertility problems.^{87,88} Treatments for infertility also can adversely affect sexuality.^{89,90} However, some studies

have found no associations between sexual functioning and fertility problems.^{91,92}

Our recommendation is that during all phases of infertility diagnosis, investigation, and management, clinicians, whenever possible, assess sexual function and satisfaction (recommendation = grade C).

Postpartum Period

Sexual function problems are believed to affect 22% to 86% of women at 2 to 6 months after childbirth.^{93–96} There is conflicting evidence on whether the mode of delivery and perineal injury affect sexual function after delivery.^{97–103}

Our recommendation is that, whenever possible, clinicians assess sexual function and satisfaction during the postpartum period (recommendation = grade B), keeping in mind that sexual response and motivation may be unrelated to timing of the physical healing from delivery.

Aging

In a survey of men and women 57 to 85 years old, approximately half the respondents reported at least one bothersome sexual problem, with low desire, orgasm, and lubrication being the most prevalent sexual problems in women and erectile difficulties being the most prevalent in men.¹⁰⁴

Many stressors and adverse life events can affect sexual function and satisfaction, including depression, physical illnesses, disabilities,^{105–110} and the lack of an available partner.¹⁰⁴

Serum testosterone levels gradually decrease in men with aging but this decrease does not always cause symptoms. However, late-onset clinical hypogonadism is associated with low libido and ED.¹¹¹

Many older people are reluctant to seek help for sexual problems.^{112–114} There is some evidence that successful sexual aging is related to the ability to adapt to sexual relationships that are less focused on intercourse.^{115,116}

Sexual health issues should be proactively discussed by clinicians with older patients (recommendation = grade A). Assessment of physical and mental illnesses that commonly occur in later life should be included as part of the initial evaluation in middle-aged and older persons presenting with sexual complaints (recommendation = grade A). It is recommended that clinicians assess adverse life events in older patients presenting with sexual dysfunctions, including evaluation of resulting anxiety and depressive symptoms (recommendation = grade A). Clinicians should be aware of the relation between symptoms of aging and psychological health in older men and request further investigation when needed (recommendation = grade A).

Menopause

Large-scale surveys have reported decreases in sexual functioning related to menopausal status.^{117,118} Factors such as partner availability,¹¹⁹ relationship quality,^{120,121} psychological function,^{119,122,123} and health^{122,124} are often more important determinants of sexual function than hormonal factors. Other

non-hormonal factors associated with sexual functioning are smoking,¹²² social class and education level,^{122,125,126} and mental health problems.¹⁰⁷

Menopausal status has an independent effect on reported changes in sex life and difficulties with intercourse. Overall, research provides support for the routine clinical investigation of psychological factors and life stressors (recommendation = grade A). Clinicians are encouraged to address contextual factors that can precipitate and maintain sexual difficulties, including relationship quality, past sexual experience, previous sexual function, and mental and physical health of menopausal women (recommendation = grade A). We also recommend that clinicians consider the potential role of partners in the etiology and maintenance of female sexual dysfunction (recommendation = grade B).

Psychological Processing Factors

Recommendations based on our review appear at the start of this article, and a more exhaustive review of the literature on psychological processing factors is presented in Table 2. Here we briefly review causal attributions, performance anxiety, efficacy expectations, distraction/attention, automatic thoughts, and state emotions as exemplars of psychological processing factors.

1. Causal Attribution to Negative Sexual Events. Men with ED tend to give internal attributions for their sexual difficulties.^{127–129} When causal attributions for low erectile response were manipulated in sexually healthy men, men with internal attributions were more likely to show decreased erectile response.¹³⁰

Women with orgasmic disorders more often attribute their problems to internal rather than external factors (eg, a sexual partner's skills).¹³¹

These findings support the role of attributional style in the etiology of sexual dysfunction. Although most studies used cross-sectional designs, at least one experimental study found a causal link between internal attribution for negative sexual events and sexual dysfunction. Clinicians are encouraged to address patients' causal attributions to their sexual problems (recommendation = grade B).

2. Performance Anxiety and Demands. In an early study, instructions to focus on achieving a full erection ("spectatoring" condition) or to focus on sexual stimuli and pleasure ("sensate focus" condition) did not affect sexual responses in sexually healthy men.¹³² In contrast, men with sexual dysfunction showed higher erectile responses in a sensate focus condition compared with a spectatoring condition.¹³³ In a study of sexually healthy women, genital response increased as a function of performance demand instructions.¹³⁴

These findings suggest that performance demands can have a different effect in individuals with and without sexual dysfunction. Sexually healthy individuals respond with higher sexual arousal,

whereas those with sexual problems show decreased sexual response in the face of performance anxiety and demands.

3. Efficacy Expectations. In aging couples in which the male partner had undergone prostate surgery, efficacy expectations of the male partner were one of the best predictors of frequency and quality of sexual functioning.¹³⁵

In women with sexual dysfunction, the manipulation of efficacy expectations through positive false feedback on physiologic sexual response had a significant effect on subsequent sexual response.¹³⁶ Using a similar paradigm with sexually healthy men, men who received false negative feedback on genital arousal reported significantly lower efficacy expectations and lower genital response compared with sexually healthy men.¹³⁷

In men with and without sexual dysfunction, negative feedback decreased self-predicted erection scores and subjective arousal to sexual films, whereas positive feedback had the opposite effect.¹³⁸ In women, negative feedback significantly decreased subjective but not genital arousal.¹³⁹

More recent studies have indicated that false feedback (whether negative or positive) has a significant impact on subjective arousal in men and women with and without sexual dysfunction but has no effect on genital sexual arousal (particularly in women). Thus, the effect of manipulated expectations (using false feedback instructions) on sexual arousal seems to be mediated by cognitive processes. Research is needed to better clarify the impact of expectations on subjective and genital arousal. Our recommendation is that clinicians assess the presence and potential role of these expectations (recommendation = grade A).

4. Cognitive Distraction and Attentional Focus. Early studies suggested that distraction interfered with erectile response in sexually healthy men^{140,141} but not in men with ED.¹⁴² Van Lankveld and van den Hout¹⁴³ reported that distraction inhibited genital arousal but had no effect on subjective sexual arousal in men with and without sexual dysfunction. In sexually healthy women, lower genital and subjective sexual arousal occurred during exposure to erotic stimuli accompanied by a cognitive distraction task.^{144,145}

Findings indicate a clear negative impact of cognitive distraction on sexual response in men and women, more consistently observed on genital arousal than on subjective arousal. Although neutral distraction tasks seem to negatively interfere with sexual response in sexually healthy men more than in men with sexual dysfunction, the opposite pattern is observed when sexual performance distractors are used. The recommendation for clinicians is to assess for the presence of cognitive distraction (recommendation = grade A).

5. Sexual Cognitions and Automatic Thoughts. Men and women with sexual dysfunction report having significantly more negative thoughts during sexual activity^{146,147} and lack of erotic

Table 2. Summary of Studies (since 2010) on the Role of Psychological Processing Factors on Sexual Function and Dysfunction

Study	n	Methodology	Results	LE
Causal attribution to negative sexual events				
Rowland et al, ³⁵³ 2013	59	59 sexually dysfunctional men recruited from a urology clinic participated in the study and completed measurements assessing patients' attributions and 5 global affective factors derived through principal components analysis: apprehension, insecure, arousable, affection, and pleasant.	Results indicated that external attribution (biomedical vs psychological or unknown) had significant effects on 3 psycho-affective factors (insecure, arousable, affection); men who attributed their problem to a biomedical cause had higher positive affect and lower insecurity.	3
Carvalho and Nobre, ⁷⁸ 2010	237	237 women from the general population answered a set of questionnaires assessing psychopathology, cognitive-emotional factors, dyadic adjustment, presence of medical pathologies, and menopause.	Findings indicated conservative beliefs and age-related beliefs were significant predictors of sexual desire. Also, lack of erotic thoughts, failure and disengagement of sexual thoughts, and thoughts related to female passivity during sexual activity were significant predictors of desire in women.	3
Carvalho and Nobre, ¹⁴⁸ 2011	237	237 men from the general population were assessed on medical problems, psychopathology, dyadic adjustment, cognitive-emotional factors, and sexual functioning. Path analysis was used to test a biopsychosocial model of sexual desire in men.	Results showed that cognitive factors (sexual beliefs and automatic thoughts during sexual activity) were the best predictors of sexual desire in men. Specifically, beliefs related to restrictive attitudes toward sexuality, erection concerns, and lack of erotic thoughts in a sexual context had a significant direct effect on decreased sexual desire. Moreover, this set of cognitive-emotional factors mediated the relation among medical problems, age, and sexual desire.	3
Carvalho et al, ¹⁶⁷ 2013	85	43 women presenting PGAD symptoms and 42 controls responded to a Web survey assessing Sexual Dysfunctional Beliefs Questionnaire, Sexual Modes Questionnaire, Positive and Negative Affect Schedule, and Brief Symptom Inventory.	Findings showed that women reporting PGAD symptoms presented significantly more negative thoughts (eg, thoughts of sexual abuse and of lack of partner's affection). Women with PGAD also presented significantly more negative affect and less positive affect during sexual activity than women without PGAD.	3
Morton and Gorzalka, ¹⁴⁶ 2013	200	Euro-Canadian (n = 77) and East Asian-Canadian (n = 123) undergraduate women completed Sexual Dysfunctional Beliefs Questionnaire, Sexual Modes Questionnaire, Female Sexual Function Index, and Vancouver Index of Acculturation.	East Asian women endorsed almost all sexual beliefs assessed in this study more than did Euro-Canadian women, and endorsement of these beliefs was associated with acculturation. Also, East Asian-Canadian and Euro-Canadian women differed in the frequency of experiencing negative automatic thoughts. Results also showed associations between difficulties in sexual functioning and both sexual beliefs and automatic thoughts.	3

(continued)

Table 2. Continued

Study	n	Methodology	Results	LE
Nelson and Purdon, ³⁵⁴ 2011	153	153 individuals from a community sample (81 women, 72 men) in long-term relationships completed measurements assessing non-erotic thoughts, sexual activity, and sexual satisfaction.	Findings indicated that women were more likely to report body image concerns and external consequences of sexual activity, whereas men were more likely to report performance-related concerns. Equally likely in men and women were thoughts about emotional consequences of the sexual activity. Regardless of thought content, experiencing more frequent NETs was associated with more sexual problems in women and men.	3
Oliveira et al, ³⁵⁵ 2014	27	27 sexually healthy men participated in a laboratory study in which they were presented with 2 sexually explicit films. Genital responses, subjective sexual arousal, self-reported thoughts, and positive and negative affect were assessed during exposure to the sexual films.	Regression analyses showed that genital responses were predicted by self-reported thoughts but not by affect during exposure to erotic films. Conversely, subjective sexual arousal was significantly predicted by positive and negative affect and self-reported thoughts. Follow-up analyses showed that "sexual arousal thoughts" were the best predictor of subjective response and that "distracting/disengaging thoughts" were the best predictor of genital response.	2
Nobre, ¹⁴⁹ 2010	352	352 men (303 participants from the general population and 49 participants with a DSM-IV diagnosis of sexual dysfunction) answered a set of questionnaires assessing cognitive and emotional variables and sexual functioning. Path analysis was conducted to test a conceptual model of male erectile disorder.	Results showed that the effects of the main proposed direct predictors explained 55% of the erectile function variance. Macho beliefs were strongly associated with erectile function. Results also indicated significant direct effects of erection concern thoughts and lack of erotic thoughts on erectile function.	3
Pujols et al, ³⁵⁶ 2010	154	Women 18–49 y old in sexual relationships (N = 154) participated in an Internet survey that assessed sexual functioning, 5 domains of sexual satisfaction, and several body image variables.	Findings indicated significant positive relations among sexual functioning, sexual satisfaction, and all body image variables. Multiple regression analysis showed that sexual satisfaction was predicted by high body esteem and low frequency of appearance-based distracting thoughts during sexual activity, even after controlling for sexual functioning status.	3
Purdon and Watson, ³⁵⁷ 2011	165	165 (n = 71 men) undergraduates completed measurements of sexual dysfunction and relationship satisfaction and reported on the content and frequency of non-erotic thoughts during sex with a partner (ie, "spectating"), emotional impact of non-erotic thoughts, and strategies used to manage them.	Findings indicated that greater frequency of, and anxiety evoked by, non-erotic thoughts was associated with poorer sexual functioning. Poorer sexual functioning was associated with more negative interpretations of ambiguous sexual scenarios, but this was mediated by relationship satisfaction. However, positive interpretations were predicted by sexual functioning.	3

(continued)

Table 2. Continued

Study	n	Methodology	Results	LE
Vilarinho et al, ¹⁶³ 2014	28	28 sexually functional women were presented with sexually explicit and non-explicit romantic films. Genital responses, subjective sexual arousal, state affect, and self-reported thoughts were assessed.	Self-reported thoughts and affect were significant predictors of subjective sexual arousal. The strongest single predictor of subjective arousal was sexual arousal thoughts. None of the cognitive or affective variables predicted women's genital responses.	2
State emotions				
Brauer 2012	84	Premenopausal U.S. and Dutch women with acquired HSDD (n = 42) and a control group of sexually functional women (n = 42) completed a single-target Implicit Association Task and a Picture Association Task assessing automatic affective associations with sexual stimuli and a dot-detection task measuring attentional capture by sexual stimuli.	Results showed that women with acquired HSDD displayed less positive (but not more negative) automatic associations with sexual stimuli than sexually functional women.	1
Mehta 2014	44	44 depressed young women (mean age = 18 y) participated in a study investigating associations of sexual desire with time of day, physical and social context, and positive and negative affect using momentary sampling.	Analyses showed that depressed young women experienced sexual desire when with their boyfriends and later in the evening. Sexual desire also was positively associated with positive affect. Sexual desire was not associated with negative affect or physical context. This research suggests that sexual desire is experienced by depressed young women in normative developmental social contexts	3
Peixoto and Nobre, ¹⁶⁵ 2015	324	Participants were 156 heterosexual and gay men and 168 heterosexual and lesbian women with and without self-reported sexual problems (matched for demographics). Participants completed a Web-survey assessing sexual functioning and the Positive Affect–Negative Affect Scale.	Findings indicated a main effect of group, with groups with sexual problems reporting significantly more negative and lower positive affect during sexual activity compared with men and women without sexual problems, regardless of sexual orientation	3
Rowland et al, ³⁵³ 2011	95	Participants were men seeking treatment at a urology clinic for a sexual problem (n = 79) or another urologic disorder (n = 16). Individuals rated their affective state across 28 descriptors in response to a partnered sexual experience.	Significant differences were found on nearly all 28 measurements of affective response and 5 major underlying factors constructed from those measurements. Dysfunctional men more strongly endorsed negative affect and functional men more strongly endorsed positive affect, although all had a significant urologic health issue. No differences existed in sexual desire or the value ascribed to sexual intimacy, suggesting that negative feelings were specifically associated with inadequate sexual performance and not general health concerns.	3

DSM-IV = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; HSDD = hypoactive sexual desire disorder; PGAD = persistent genital arousal disorder.

thoughts¹⁴⁷ compared with sexually healthy individuals. In men, lack of erotic thoughts and erection concerns during sexual activity are significant predictors of decreased sexual desire^{78,148} and ED.¹⁴⁹

“Failure” and disengagement thoughts and lack of erotic thoughts are more often reported by women with sexual desire, orgasm, and vaginismus problems than by sexually healthy controls.^{78,147,150,151} A relation between negative body image concerns during sexual activity and difficulties in reaching orgasm among women also has been found.¹⁵²

Findings indicate that cognitive distraction from erotic cues is strongly associated with sexual dysfunction. These negative automatic thoughts experienced during sexual activity could be the result of previous activation of negative self-schemas and seem to play an important role as maintaining factors for sexual dysfunction. Clinicians are encouraged to systematically assess the content of thoughts patients experience during sexual activity (recommendation = grade A).

6. State Emotions. Anxiety. Early experimental studies in men and women have suggested that state anxiety might be associated with no change in¹³² or even an enhanced^{142,153,154} genital response. Studies conducted in women with and without sexual problems have reported a facilitating effect of anxiety and activation of the sympathetic system^{135,155–157} on genital sexual response but not on subjective arousal.

In general, findings consistently suggest a facilitating role of sympathetic activation on genital response (but not on subjective arousal) in men and women with and without sexual dysfunction. The role of the cognitive component of anxiety is not yet established, but findings suggest a detrimental effect on sexual arousal in men with sexual dysfunction but not in sexually healthy men. We recommend that clinicians assess for the presence and role of state anxiety during sexual activity (recommendation = grade B).

Low Mood. Several studies have reported that men with sexual dysfunction show significantly higher depressed affect during exposure to erotica compared with sexually healthy men.^{133,142,158,159} In a test of the effect of induced mood on sexual response, men in a depressed mood condition showed a significant delay in subjective sexual arousal during exposure to an erotic film compared with men in a positive mood condition; genital response did not differ between the two groups.¹⁶⁰ A significant increase in erectile response in men in a positive affect condition compared with men in a neutral affect condition was reported in one study¹⁶¹; men in a negative affect condition showed less erectile response compared with men in a neutral condition.

Several studies have indicated that positive affect (but not negative affect) is a significant predictor of subjective sexual arousal in sexually healthy men and women.^{162–164}

Men and women with sexual dysfunction report having significantly more negative emotions (eg, sadness or fear) and less pleasure and satisfaction during sexual activity compared with sexually healthy individuals.^{76,77,149,165–168}

These data suggest that low mood is strongly associated with sexual response and sexual functioning in men and women. Findings from experimental studies support this association, suggesting that state depressed mood has a negative impact on sexual arousal. It is recommended that clinicians address patients’ mood states (recommendation = grade B).

COMORBID MENTAL HEALTH ISSUES

Depression and its pharmacologic treatment are associated with sexual difficulties in men and women.^{51,169,170}

Different types of anxiety disorders can have differential effects on sexual function. Panic disorder appears to have a stronger relation with sexual disorders than social phobia.¹⁷¹ Individuals with obsessive-compulsive disorder have higher rates of orgasmic dysfunction than patients with generalized anxiety disorder¹⁷² or social anxiety.¹⁷³ Studies on depression, anxiety, and sexual function (since 2010) are summarized in Table 3.

Stress

Studies on the effects of acute stressors on sexual function have found mixed results, with some showing facilitatory^{174,175} and others inhibitory^{153,176} effects. There is increasing evidence for the negative effects of chronic stress, including daily hassles, on sexual function,^{177,178} and provoked genital pain.¹⁷⁹

Our recommendation is that clinicians routinely assess for the presence of stress, including daily hassles and critical life events, when assessing patients’ sexual function and satisfaction and quality of the relationship (recommendation = grade A).

Depression

The most common pattern associated with depression is loss or decrease of sexual interest and/or sexual arousal.^{51,180,181} In a study of patients presenting with desire disorders, the proportion of low desire in individuals with histories of major and intermittent depression was almost twice as large as that of controls.¹⁸² In men, depression and anger are highly correlated with ED^{183–185} and with low sexual¹⁸⁶

Women with current depression have more impaired sexual function than non-depressed women.¹⁸⁷ In a cohort study of sexually active women 40 to 65 years old, lower sexual function was related to menopausal and mood symptoms.¹⁸⁸ Other studies have reported similar findings.^{189,190}

Depression and Physical Illness

In women with multiple sclerosis and their partners, self-reports of relationship and physical functioning were significantly associated with the women’s depression scores.¹⁹¹

Table 3. Summary of Studies (since 2010) on the Relation Between Depression and Anxiety Disorders and Sexual Functioning

Study	n	Methodology	Results	LE
Depression				
McPheters et al, ¹⁹¹ 2010	54	The study explored associations between patients with MS and partner reports of physical functioning, depression, and couple relationship quality.	Depression and couple relationship quality were associated with physical functioning of the patient with MS. Couples with higher relationship quality might be better able to cope with the stresses of MS.	3
Clayton et al, ¹⁸⁷ 2012	1,088	Validated measurements of sexual function and distress, physical and mental health, and depression symptoms.	Approximately one third of premenopausal women with HSDD presented with current symptoms or a diagnosis of depression. Women with HSDD and depression reported poorer relationships and sexual function compared with women with HSDD and no depression.	3
Perez-Lopez et al, ¹⁸⁸ 2012	179	Cross-sectional study in which 179 sexually active women (40–65 y old) completed the 6-item FSFI, Menopause Rating Scale, and Hospital Anxiety and Depression Scale.	In this middle-age Spanish sample, lower sexual function was related to menopausal and mood symptoms and in several women to partner factors.	3
Rutte et al, ³⁵⁸ 2014	158	This study assessed the prevalence and correlates of sexual dysfunction in a sample of Dutch men and women with type 2 diabetes	Sexual dysfunction was highly prevalent in men and women with type 2 diabetes and was associated with older age, clinical depression, and diabetes-related complications.	3
Shadman et al, ¹⁹² 2014	420	This study considered all possible influencing variables, including hormonal, physical and psychological status, socioeconomic status, and dietary intake.	FSFI showed a significant negative association with age, stress-depression score, and systolic blood pressure.	3
Dunlop et al, ¹⁹⁷ 2015	808	Baseline data from 808 chronically depressed outpatients with and without a history of CSA were evaluated using structural equation modeling.	CSA scores predicted depression severity and lower relationship quality and sexual satisfaction. Long-term effects of CSA appear to be mediated by depressive and anxious symptoms.	3
Lee et al, ¹⁹⁴ 2015	304	This observational cohort study enrolled premenopausal and sexually active women diagnosed with early-stage breast cancer. Questionnaires were completed, and sexual activity was measured after surgery, to assess sexual activity and function before diagnosis, and then ≥12 mo after completion of chemotherapy or endocrine therapy.	Chemo-related menopause was significantly associated with sexual inactivity and dysfunction after treatment. Thyroid dysfunction and depression were risk factors for sexual inactivity in younger breast cancer survivors.	3

(continued)

Table 3. Continued

Study	n	Methodology	Results	LE
Oskay et al, ¹⁹⁵ 2015	45	This study assessed sexual function and depression in women with MI.	The correlation between FSFI and BDI total scores indicated that increasing BDI scores in the MI and control groups affected total FSFI scores negatively.	3
Anxiety				
Dettore et al, ³⁵⁹ 2013	130	Women without an anxiety disorder were compared with women with an anxiety disorder to examine the effect of anxiety on sexual response and propensity toward sexual inhibition or excitation.	Women with an anxiety disorder reported worse sexual functioning compared with those without an anxiety disorder (except for desire, lubrication, and pain) and a greater propensity toward sexual inhibition.	3
Kempeneers et al, ²⁰⁷ 2013	461	Main outcome measurements were self-reported ejaculatory latency time, feeling of control at ejaculation, sexual satisfaction, distress related to PE, trait anxiety, sexual cognitions, and social anxiety.	Men with generalized and lifelong PE with self-reported latency times <30 s reported lower sexual satisfaction and control, higher distress, higher social anxiety, and harm avoidance. The situational subtype of PE was characterized by a higher level of satisfaction, a greater feeling of control, less distress, and higher trait anxiety scores.	3
Punnen et al, ³⁶⁰ 2013	649	Questionnaires assessing levels of depression, anxiety, distress, and urinary and sexual function were applied at baseline, within 1 y, and 1–3 y from baseline.	Moderate or higher levels of depression or anxiety were low in men with localized prostate cancer but were associated with sexual outcomes, whereas increased distress was associated with urinary outcomes.	2
Kalmbach et al, ³⁶¹ 2014	171	The study used a 2-wk daily diary approach to examine same-day and temporal relations between affective symptoms and sexual function.	Simultaneous changes in affective symptoms and sexual function could indicate that they are products of shared underlying mechanisms. That is, in response to stress, the processes manifesting as feelings of weak positive affect and amotivation are the very same processes responsible for decreased capacity for sexual desire.	3

BDI = Beck Depression Inventory; CSA = childhood sexual abuse; FSI = Female Sexual Function Index; HSDD = hypoactive sexual desire disorder; LE = level of evidence; MI = myocardial infarction; MS = multiple sclerosis; PE = premature ejaculation.

In a study of menopausal women with diabetes, sexual function was related to age, stress, depression, duration of diabetes, and systolic blood pressure.¹⁹² In another study, most men and women with type 2 diabetes had sexual problems; sexual difficulties were positively associated with age, clinical depression, and at least one diabetes-related complication.¹⁹³

Sexual difficulties also have been reported to be common in breast cancer survivors,¹⁹⁴ women who had had myocardial infarction,¹⁹⁵ and women with systemic sclerosis.¹⁹⁶

Depression and History of CSA

In a sample of chronically depressed adults, history of CSA predicted depression severity and lower relationship quality and sexual satisfaction.¹⁹⁷

Our recommendation is that sexual symptoms, satisfaction, and distress be assessed in the context of depression; similarly, in the presence of sexual difficulties, depressed mood should be assessed (recommendation = grade A). The clinician should be aware of the potential bidirectional nature of this relation and the potential complicating role of antidepressant medications—which can improve mood symptoms but might exacerbate sexual symptoms.

Anxiety and Female Sexual Dysfunction

Overall, the evidence for the role of anxiety in sexually dysfunctional women is mixed^{198–200} (Table 3 presents a more comprehensive review).

A few studies have examined the relation between specific types of anxiety disorder and female sexual dysfunction. In one study, social phobia was associated with concomitant desire disorders and dyspareunia.²⁰¹ Women with panic disorder comorbid with obsessive-compulsive disorder or with depression showed significantly lower sexual desire than sexually healthy women.^{202,203} Low sexual desire and orgasmic disorder appeared more prevalent in women with generalized anxiety.²⁰⁴

Anxiety and Male Sexual Dysfunction

Compared with sexually healthy men, men with ED report higher levels of sexual anxiety but no difference in general or social anxiety.²⁰⁵ In men with ED, Mallis et al²⁰⁶ found that most had high levels of state and trait anxiety, but only trait anxiety was correlated with ED severity.

Men with generalized and lifelong PE have lower sexual satisfaction and control, higher distress, and higher social anxiety, and harm avoidance scores.²⁰⁷ In contrast, men with situational PE are characterized by higher levels of satisfaction, greater feelings of control, less distress, and higher trait anxiety scores.

Controlled studies of male sexual dysfunction and specific types of anxiety disorder are scarce.²⁰⁴ Panic disorder has been linked to ED^{171,208,209} and social phobia with PE.^{171,210,211} Anxiety related specifically to sexual performance can be a significant contributor to PE²¹² and ED.^{213,214}

Anxiety and Sexual Performance

Research has demonstrated that anxiety is not always disruptive to sexual functioning. Although moderate levels and relatively “safe” situations can enhance sexual arousal, higher levels of anxiety likely impair sexual functioning.²⁰³

In summary, assessment of depression and anxiety should be carried out as part of the initial evaluation in individuals presenting with sexual complaints (recommendation = grade A). An attempt should be made to ascertain whether the anxiety or depression is a consequence or a cause of the sexual complaint. If there is pre-existing acute depression, this should be treated with the sexual problem. Some research suggests that relief of the sexual problem is associated with relief of depression.²¹⁵ The role of antidepressants and antianxiety medications as contributory factors to sexual dysfunction should be evaluated in addition to any other mental health comorbidities (recommendation = grade C).

Post-Traumatic Stress Disorder

Sexual dysfunction is a frequent complaint of trauma survivors.^{216–222} In two studies of military veterans,^{223,224} PTSD was a significant risk factor for sexual dysfunction.

We suggest that clinicians assess for the presence of PTSD symptoms when evaluating sexual function in men and women. Treatment recommendations for men and women who experience a traumatic event should include screening for sexual dysfunction. Sexual functioning should be assessed in the context of partner intimacy, because men with PTSD might have no difficulty with erection and ejaculation with masturbation, yet have problems in partnered settings. Therapy should address sexual avoidance of the partner with PTSD, the shame and guilt associated with the trauma, and sexual dysfunction (recommendation = grade A).

Substance Use

Alcohol consumption can be directly associated with a decrease in sexual function due to inhibition of genital response^{225,226} or indirectly through decreasing negative emotions such as depression or anxiety.^{225,226} Alcohol has long been regarded a risk factor for ED, but epidemiologic evidence has been equivocal.²²⁷ Three large studies demonstrated progressively smaller odds ratios of ED with increasing levels of alcohol consumption.^{228–230} These studies suggest that, at least when consumed at low levels, regular consumption of alcohol in men is not a risk factor for ED.

Studies examining the effects of long-term alcohol consumption on sexual function in women are scarce. In one investigation, women with heavy alcohol use were more likely to report problems with orgasm and arousal but less likely to report problems with functional dyspareunia.²³¹ Witting et al²³² found that greater alcohol use was related to fewer sexual function

problems, whereas drinking in connection to intercourse was related to increased likelihood of sexual problems.

Evidence suggests that smoking can significantly increase the risk of ED,^{233,234} and this association might be potentiated with alcohol use, physical inactivity, or comorbid physical conditions.²³⁵ In a laboratory study of women who were randomized to receive nicotine gum or placebo gum before viewing an erotic film, nicotine significantly decreased genital responses to erotic films but had no effect on subjective arousal.²³⁶

Although there are differential effects of specific drugs, all recreational drugs can affect sexual functioning in men.^{237–239} Research on the effects of substance abuse on sexual function in women is very limited.²⁴⁰

In summary, although there has been little research in this area, particularly involving women, most of the available research suggests a negative effect of nicotine and recreational drug use on sexual functioning. We recommend that clinicians assess for the use and abuse of alcohol, nicotine, and other drugs in patients presenting with sexual concerns (recommendation = grade B).

INTERPERSONAL AND RELATIONAL FACTORS

Most, although certainly not all, sexual activity occurs in an interpersonal context. The quality of the non-sexual aspects of the relationship and the two partners' experiences within the sexual interaction can affect sexual functioning.

Intimacy

One important motivation for sexual activity is enhancing emotional intimacy.²⁴¹ In a survey of women with chronic vulvar and pelvic pain, women who reported greater intimacy reported less impact of the pain on their sexual relationship.²⁴² In women with provoked vestibulodynia, sexual satisfaction was associated with women's and their partner's reports of sexual intimacy²⁴³; however, emotional intimacy was not associated with sexual satisfaction.

Low sexual desire in women has been associated with low dyadic cohesion and low affection¹⁵⁰ and with lower levels of intimacy and less relationship satisfaction.²⁴⁴ Individuals with lower sexual satisfaction and/or sexual dysfunction appear to have poorer sexual and non-sexual communication.^{44,245–250}

In women in same-sex and mixed-sex relationships, having sex to improve intimacy with partners has been associated with greater sexual satisfaction, whereas having sex to please partners or maintain the relationship has been associated with lower sexual satisfaction.²⁵¹ In research examining motives for sex, "approach-related" goals that focus on obtaining positive outcomes (eg, enhanced intimacy) have been positively associated with relationship and sexual satisfaction for women and men and "avoidance-related" goals that focus on averting negative outcomes have been associated with lower sexual and relational satisfaction.²⁵²

Relationship Satisfaction

There is a strong link between relationship well-being and sexual satisfaction.^{249,253–258}

Individuals with low sexual desire experience lower relationship satisfaction and dyadic adjustment.^{78,259–261} In one study, the major predictors of female sexual problems were relationship dissatisfaction and partner sexual dysfunction.²⁶²

Partner Sexual Dysfunction

A woman's sexual dysfunction can affect not only her own but also her partner's sexual functioning.^{123,263–266} Women whose partners have PE consistently report diminished sexual satisfaction, although there might be little impact on the female partner's sexual function.^{267,268}

Female partners of men with ED are more likely to experience sexual problems than are the partners of men without ED.^{269–272} Several studies have shown improvement in the female partner's sexual functioning after the male partner's treatment with phosphodiesterase type 5 inhibitors.^{264,270,273–276} A more comprehensive review of the impact of a man's ED on the female partner is presented in Table 4.

There is some evidence associating vaginismus and dyspareunia in women with sexual dysfunction, in particular ED, in the male partner.^{277–279}

Taken together, these studies consistently demonstrate the interdependence of sexual function between partners. Specifically, they suggest that dysfunction in one partner tends to cause problems in sexual functioning and/or sexual satisfaction for the other and that improvement in function in one partner tends to have a positive effect on the other partner. Conversely, some couples report high sexual satisfaction even when one partner has a sexual dysfunction.²⁴⁷ Thus, we recommend that clinicians take a biopsychosocial approach to the assessment and treatment of sexual dysfunctions (recommendation = grade B) and that assessment include evaluation of the two partners when possible (recommendation = grade B).

Partner Illness

Among the myriad possible partner-related illnesses, a few have been studied with regards to their impact on sexual function in a partner. In couples with chronic prostatitis or chronic pelvic pain syndrome, pain severity significantly predicts sexual and relationship functioning.²⁸⁰ Research on men with prostate cancer and their partners has reported negative changes in sexual functioning.^{281–283} Women whose partners had a myocardial infarction during the previous year have reported decreased desire and function in their partners and a negative impact on themselves.²⁸⁴

We recommend that when one partner has an illness that affects sexual functioning, the two partners should be involved in assessment and treatment to discuss each partner's role in the other's sexual adjustment after treatment and to help the couple develop a new sexual script (recommendation = grade B).

Table 4. Summary of Studies on the Impact of Erectile Dysfunction on the Female Partner

Study	n	Methodology	Results	LE
Fisher et al, ²⁷¹ 2005	293 partners	Internet questionnaires, frequency of sexual activity, and sexual experience before and after development of partner's ED and with PDES inhibitor.	Sexual frequency and sexual satisfaction were less frequent after ED. Women whose partners were currently using PDES inhibitors had a more satisfying sexual experience than those whose partners did not use a PDES inhibitor.	2
Goldstein et al, ³⁶² 2005	229 couples	Randomized, double-blinded, placebo-controlled vardenafil vs placebo trial using FSFI and mSLQQ for QoL of female partners.	Vardenafil increased multiple domains of women's sexual function, except pain, and a marked improvement in sexual QoL of female partners.	1
Fisher et al, ²⁷¹ 2005	197 couples	Randomized, double-blinded, placebo-controlled vardenafil vs placebo trial using FSFI and mSLQQ to measure QoL.	Vardenafil increased QoL and each FSFI domain. Partners' total mSLQQ QoL score in vardenafil group was double that of the placebo group.	1
Hundertmark et al, ³⁶³ 2007	96 couples	Randomized, double-blinded, placebo-controlled vardenafil vs placebo trial using the Dyadic Adjustment Scale.	No difference between the 2 groups in relationship functioning.	1
Chevret-Méasson et al, ²⁷⁰ 2009	57 couples	Prospective, open-labeled clinical trial of sildenafil, context close to routine clinical practice, ISL and EDITS-Partner.	ISL sexual life satisfaction score was low at baseline and increased with a very significant change in each domain: desire, satisfaction with her sexual life, and general life satisfaction.	2
Heiman et al, ²⁷⁵ 2007	155 couples	Randomized, double-blinded, placebo-controlled sildenafil trial using the (i) FePDES Q3 and (ii) SFQ, FSFI, and EDITS-Partner.	Greater improvement in Q3 for sexual function; sexual satisfaction measurements showed the interdependence of sexual function and satisfaction between members of couple.	1
Cayan et al, ²⁶⁴ 2004	87 with partners, 38 partners with ED, 13 partners with sildenafil-treated ED, 17 partners with penile prosthesis	Women's sexual function was evaluated with FSFI. Men evaluated with IIEF.	After treatment of men's ED, significant improvement in sexual arousal, lubrication, orgasm, and satisfaction was reported by women.	4
Conaglen and Conaglen, ³⁶⁴ 2008	100 couples	Sildenafil or tadalafil for a 12-wk phase, followed by another 12-wk period using the alternate drug. Female partners were interviewed at baseline, midpoint, and end of study.	79.2% of women preferred their partners' use of tadalafil, whereas 15.6% preferred sildenafil. Women's reasons were relaxed, satisfying, longer-lasting sexual experiences.	4

ED = erectile dysfunction; EDITS = Erectile Dysfunction Inventory of Treatment Satisfaction; FePDES Q3 = Female Partner of ED Subject Questionnaire question 3; FSFI = Female Sexual Function Index; IIEF = Internation Index of Erectile Function; ISL = Index of Sexual Life; LE = level of evidence; mSLQQ = modified Sexual Life Quality Questionnaire; PDES = phosphodiesterase type 5; QoL = quality of life; SFQ = Sexual Function Questionnaire.

Partner Discrepancies

Discrepancies in level of sexual desire between partners often affect sexual functioning.^{232,277}

In couples in monogamous long-term relationships, higher desire discrepancies have been associated with lower relationship satisfaction for men but not for women.²⁸⁵ For couples in long-term relationships, discrepancies of desire have predicted an individual's and the partner's ratings of quality of the sexual experience.²⁸⁵ In married couples²⁸⁶ and women in same-sex relationships,²⁵⁵ desire discrepancy has predicted lower relationship satisfaction, lower relationship stability, and greater couple conflict.

Partner Responses

The partner's response can influence the extent to which an individual finds his or her or the partner's sexual difficulties distressing.²⁸⁷ Male partners of women with provoked vestibulodynia who made more global and stable negative attributions about their partner's pain reported lower sexual satisfaction and poorer dyadic adjustment.²⁸⁸ A male partner's facilitative responses (reactions that encourage women's adaptive coping with the pain) to his female partner with provoked vestibulodynia were associated with lower self-reports of pain compared with solicitous responses (responses that reinforce avoidance and passivity).^{289,290}

Partner Violence

Episodes of physical and sexual intimate partner violence have been associated with increased sexual risk taking, sexually transmitted infections, unintended pregnancy, and chronic pelvic pain. Episodes of sexual and emotional abuse in adulthood have been significantly and positively associated with sexual difficulties, in particular pain and dissatisfaction.³⁰

We recommend that dyadic factors and relationship quality be addressed in sex therapy (recommendation = grade B) and that, for people in a romantic relationship, the partner be included in treatment of any sexual dysfunction whenever possible (recommendation = grade B).

PSYCHOLOGICAL TREATMENT OUTCOME

Overview of Methodologic Issues

The goal of psychological therapies is increasingly recognized as not simply the absence of dysfunction but the presence of positive sexual and relationship functioning.²⁹¹ There has been a shift in focus from assessing only improvement in individual sexual functioning to broader and more clinically meaningful outcome variables such as sexual satisfaction,²⁹² sexual quality of life, and sexual confidence.²⁹³

Although there are validated assessments of sexual functioning and of sexual distress,^{294,295} some are suitable only for sexually active individuals or for heterosexual couples²⁹⁶; few assessments exist for sexual minority individuals.²⁹⁷

When evaluating sexual function variables, what constitutes a "good" outcome is not straightforward. In recent pharmacological

trials, the focus has been on sexual activity (eg, percentage increase in the number of "sexually satisfying events"),²⁹⁸ but this focus on quantity rather than quality of sexual activity has been criticized.²⁹⁹

After an early spate of outcome studies in the 1970s and 1980s, many of which were uncontrolled, few evaluations of psychological treatments have been conducted in recent years, and few have focused on unique delivery methods (eg, Internet therapy) and diverse patient samples (eg, those from sexual minority groups). There also has been limited attention paid to prognostic factors that relate to specific psychological treatments.³⁰⁰ One exception is female sexual pain disorders, for which there have been several well-designed controlled outcome studies.^{301–303} The decrease in outcome research does not reflect a lack of growth in sex therapy,^{304,305} and some have argued that the growth of sexual medicine has highlighted the need for an integration of medical and psychological approaches.³⁰⁶

Some newer approaches (eg, Internet-based therapies) require careful consideration of the choice of treatment outcome assessments (recommendation = expert opinion). There is a need to develop psychometrically valid sexual function assessments for gay, lesbian, bisexual, transgender, and queer individuals (recommendation = research principle). More research is needed to identify prognostic indicators of treatment success (eg, individual and interpersonal factors; recommendation = grade B).

Treatment Outcomes for Women

Women With DSM-IV HSDD

A meta-analysis yielded 20 controlled studies, most involving CBT approaches.³⁰⁷ Overall, a large effect size for the primary end point of low desire and a moderate effect size on improving sexual satisfaction were reported. CBT approaches also can improve quality of sexual and marital life and sexual satisfaction.³⁰⁸ Inclusion of the male partner in CBT treatment for low desire yields better outcomes.³⁰⁹

Two controlled studies evaluated mindfulness-based therapy compared with a wait-list control group^{310,311}; these studies found that this approach led to significant improvements in sexual desire in women (strong effect size), but this research was limited in the absence of a treatment control group.

Based on the meta-analysis showing strong effect sizes, we recommend that clinicians use CBT in the treatment of women with low sexual desire (recommendation = grade A). We also recommend that the clinician consider mindfulness-based therapy for women with low sexual desire (recommendation = grade B) and that clinicians, whenever possible, use couple- or group-based therapy over individual therapy (recommendation = grade A).

Women With DSM-IV Female Sexual Arousal Disorder

A meta-analysis and a systematic review identified no controlled treatment outcome studies focused on women with specifically sexual arousal complaints.^{307,312} As such, no

Table 5. Summary if the Psychotherapy Outcomes Studies for the Treatment of Erectile Dysfunction (since 2010)

Study	Methodology	Results	LE
Günzler and Berner, ³⁰⁹ 2012	Systematic review of controlled clinical trials; 14 ED studies were included. Of these, 4 investigated only psychosocial interventions in men with ED. Outcomes were efficacy measured by different indicators: frequency of and satisfaction with sexual activity, sexual functioning, self-assessment of efficacy of treatment, satisfaction with treatment, quality of life, and partnership. Main outcome measurements ranged from psychometrically validated scales, diary notes to interviews, and clinical assessments by an independent rater.	Overall, psychosocial interventions in men with ED were successful. Whether they are more effective than pharmacotherapy is still unclear and studies came to different results. Sex therapy, communication training, hypnosis, Internet-based cognitive-behavioral therapy counseling, or theme-based group therapy seemed effective.	4
Frühauf et al, ³⁰⁷ 2013	Systematic review and meta-analysis of 14 studies (ED = 2) with direct comparison of active interventions. Primary outcome was self-rated symptom severity. Secondary outcome was self-rated sexual satisfaction.	This meta-analysis found no clear evidence that psychological interventions are effective in patients with ED. There are still many gaps in research that need to be filled concerning topics such as efficacy of specific interventions for specific sexual dysfunctions, comparative efficacy of different interventions, and underpinning of effects by methodologically sound studies with larger samples.	2

ED = erectile dysfunction; LE = level of evidence.

recommendations can be made for this population of women at this time.

Women With *DSM-IV* Female Orgasmic Disorder

Most treatment programs for acquired female orgasm problems include a combination of sex education, sexual skills training, couple therapy, directed masturbation, and sensate focus.³¹³ In a meta-analysis, there was a moderate effect size for the efficacy of psychological treatments on the primary end point of anorgasmia and a moderate effect size for sexual satisfaction.³⁰⁷

In the only study evaluating the coital alignment technique,³¹⁴ a significantly higher rate of orgasms during intercourse, simultaneous orgasms between partners, and satisfying orgasms was reported.

Taken together, we recommend CBT for women with anorgasmia (recommendation = grade A). Although the coital alignment technique is often used for women who wish to become orgasmic during vaginal penetration with intercourse, only one study evaluated the effectiveness of this method. Thus, we can only provide an expert opinion recommendation on this approach.

Treatment Outcomes for Men

Men With ED

There have been few large, randomized controlled studies evaluating the efficacy of psychological treatment of ED

(Table 5).^{307,312,316} Despite this, a CBT approach, combined with the use of as-needed antidepressant medication, is often recommended.^{215,317,318}

In a systematic review, 13 randomized controlled trials that investigated psychosocial interventions in men with ED were identified; overall, interventions were successful.³¹² In contrast, another meta-analysis found only non-significant, moderate effect sizes of psychological therapy for ED.³⁰⁷

In studies of men with ED, those who were randomized to receive psychotherapy plus sildenafil showed greater improvement and lower attrition than those receiving sildenafil only.^{319,320} In a meta-analysis, two trials compared group therapy plus sildenafil with sildenafil alone; the two studies concluded that there was evidence that group psychotherapy can improve erectile function.³¹⁶

Taken together, this literature review allows us to recommend group or couple therapy over individual therapy for men with ED (recommendation = grade A). We recommend that clinicians use CBT for men with ED (recommendation = grade A). Based on findings of better efficacy with combined psychological interventions and medical treatment over psychological or medical treatment alone, we recommend that clinicians use psychological interventions to supplement medical treatment (recommendation = grade A).

Men With PE

Although the authors of a recent systematic review concluded that behavioral techniques are effective for men with PE,³¹² most outcome studies have been uncontrolled, with small samples and limited or no follow-up.³²¹ Overall there is weak and inconsistent evidence regarding the effectiveness of psychological interventions for the treatment of PE.^{307,322}

We recommend that clinicians consider psychological or behavioral interventions in the treatment of men with PE (recommendation = expert opinion). We also recommend that the clinician use psychological or behavioral interventions to supplement medical treatment of PE (recommendation = expert opinion).

Men With DE

A range of treatment techniques have been used to treat DE,^{323–325} but the literature on these approaches is mainly anecdotal.³²⁶

We recommend that clinicians consider psychological or behavioral interventions in the treatment of men with DE (recommendation = expert opinion). We also recommend that the clinician use psychological or behavioral interventions to supplement medical treatment of DE (recommendation = expert opinion).

Men With HSDD

There are no reports solely on the psychological treatment of men presenting with HSDD.³²⁷

We recommend that clinicians consider psychological or behavioral interventions in the treatment of men with HSDD (recommendation = expert opinion). We also recommend that clinicians use psychological or behavioral interventions to supplement medical treatment of HSDD (recommendation = expert opinion).

INTEGRATING MEDICAL AND PSYCHOLOGICAL TREATMENTS FOR SEXUAL DYSFUNCTION

Combination or integrated treatment addresses the relevant medical and psychosocial issues that predispose, precipitate, and perpetuate sexual dysfunction.^{328–332}

There is scant literature on combination therapy for women with sexual dysfunction. For men, most studies of sildenafil alone vs psychotherapy plus sildenafil for men with ED have demonstrated superiority of combined treatment.^{319,333–337}

Beneficial effects of combining psychological treatment with intracavernosal injection therapy also have been reported,^{338–341} although not consistently.³⁴⁰ In a study of combined treatment using vacuum therapy and counseling,³⁴² greater improvement occurred in the combined group.

Several studies that compared combined behavior and drug therapy with behavioral therapy and/or drug treatment alone for

men with PE showed small but significant differences favoring the combined approach.^{343–345}

We recommend that health care providers approach the management of sexual dysfunction with combination or integrated treatments wherever possible (recommendation = grade A).

ACKNOWLEDGMENT

The authors are grateful for the support and guidance of Dr. Stanley Althof, who was the Vice Chair of the International Consultation on Sexual Medicine.

Corresponding Author: Lori Brotto, PhD, Department of Obstetrics/Gynaecology, University of British Columbia, 2775 Laurel Street Vancouver, BC V5Z 1M9, Canada. Tel: 604-875-4111, ext. 68898; E-mail: Lori.Brotto@vch.ca

Conflict of Interest: The authors report no conflicts of interest.

Funding: None.

STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design

Lori Brotto; Sandrine Atallah; Crista Johnson-Agbakwu; Talli Rosenbaum; Carmita Abdo; E. Sandra Byers; Cynthia Graham; Pedro Nobre; Kevan Wylie

(b) Acquisition of Data

Lori Brotto; Sandrine Atallah; Crista Johnson-Agbakwu; Talli Rosenbaum; Carmita Abdo; E. Sandra Byers; Cynthia Graham; Pedro Nobre; Kevan Wylie

(c) Analysis and Interpretation of Data

Lori Brotto; Sandrine Atallah; Crista Johnson-Agbakwu; Talli Rosenbaum; Carmita Abdo; E. Sandra Byers; Cynthia Graham; Pedro Nobre; Kevan Wylie

Category 2

(a) Drafting the Article

Lori Brotto; Sandrine Atallah; Crista Johnson-Agbakwu; Talli Rosenbaum; Carmita Abdo; E. Sandra Byers; Cynthia Graham; Pedro Nobre; Kevan Wylie

(b) Revising It for Intellectual Content

Lori Brotto; Sandrine Atallah; Crista Johnson-Agbakwu; Talli Rosenbaum; Carmita Abdo; E. Sandra Byers; Cynthia Graham; Pedro Nobre; Kevan Wylie

Category 3

(a) Final Approval of the Completed Article

Lori Brotto; Sandrine Atallah; Crista Johnson-Agbakwu; Talli Rosenbaum; Carmita Abdo; E. Sandra Byers; Cynthia Graham; Pedro Nobre; Kevan Wylie

REFERENCES

- McCabe M, Althof SE, Leiblum SR, et al. Psychological and interpersonal dimensions of sexual function and dysfunction. *J Sex Med* 2010;7:327–336.
- Jürgensen M, Kleinemeier E, Lux A, et al. Psycho-sexual development in adolescents and adults with disorders of sex

- development—results from the German Clinical Evaluation Study. *J Sex Med* 2013;10:2703-2714.
3. Brinkmann L, Schuetzmann K, Richter-Appelt H. Gender assignment and medical history of individuals with different forms of intersexuality—evaluation of medical records and the patients' perspective. *J Sex Med* 2007; 4:964-980.
 4. Crouch NS, Minto CL, Liao LM, et al. Genital sensation after feminizing genitoplasty for congenital hyperplasia: a pilot study. *BJU Int* 2004;93:135-138.
 5. Davies MC, Creighton SM, Woodhouse C. The pitfalls of vaginal construction. *BJU Int* 2005;95:1293-1298.
 6. Miesusset R, Soulié M. Hypospadias: psychosocial, sexual, and reproductive consequences in adult life. *J Androl* 2005; 26:163-168.
 7. Cavallini G, Caracciolo S. Pilot study to determine improvements in subjective penile morphology and personal relationships following a Nesbit plication procedure for men with congenital penile curvature. *Asian J Androl* 2008;10:512-519.
 8. Tal R, Nabulsi O, Nelson CJ, et al. The psychosocial impact of penile reconstructive surgery for congenital penile deviation. *J Sex Med* 2010;7:121-128.
 9. Cardenas D, Martinez-Barrizonte J, Castillo LC, et al. Sexual function in young adults with spina bifida. *Curr Bladder Dysfunct Rep* 2010;5:71-78.
 10. Sheaffer AT, Lange E, Bondy CA. Sexual function in women with Turner syndrome. *J Womens Health* 2008;17:27-33.
 11. Rolstad SG, Möller A, Brymanc I, et al. Sexual functioning and partner relationships in women with Turner syndrome: some empirical data and theoretical considerations regarding sexual desire. *J Sex Marit Ther* 2007;33:231-247.
 12. Rieger G, Linsenmeier JA, Gygax L, et al. Sexual orientation and childhood gender nonconformity: evidence from home videos. *Dev Psychol* 2008;44:46-58.
 13. Green R. The sissy boy syndrome and the development of male homosexuality. New Haven: Yale University Press; 1989.
 14. Carver PR, Egan SK, Perry DG. Children who question their heterosexuality. *Dev Psychol* 2004;40:43-53.
 15. Zucker KJ. Gender identity disorder and psychosexual problems in children and adolescents. London: Guilford Press; 1995.
 16. Beech AR, Mitchell IJ. A neurobiological perspective on attachment problems in sexual offenders and the role of selective serotonin re-uptake inhibitors in the treatment of such problems. *Clin Psychol Rev* 2005;25:153-182.
 17. Dwyer RG, Boyd MS. Sex education for male adolescent sex offenders in a group setting led by general psychiatry residents: a literature review and example in practice. *Am J Sex Educ* 2009;4:208-224.
 18. Owen-Anderson AFH, Bradley SJ, Zucker KJ. Expressed emotion in mothers of boys with gender identity disorder. *J Sex Marital Ther* 2010;36:327-345.
 19. Hill DB, Menville E, Sica KM, et al. An affirmative intervention for families with gender variant children: parental ratings of child mental health and gender. *J Sex Marital Ther* 2010; 36:6-23.
 20. Walsh A. Parental attachment, drug use, and facultative sexual strategies. *Soc Biol* 1995;42:95-107.
 21. Hayatbakhsh MR, Najman JM, Jamrozik K, et al. Childhood sexual abuse and cannabis use in early adulthood: findings from an Australian birth cohort study. *Arch Sex Behav* 2009;38:135-142.
 22. Bitzer J, Giraldi A, Pfaus J. Sexual desire and hypoactive sexual desire disorder in women. Introduction and overview. Standard operating procedure (SOP part 1). *J Sex Med* 2013; 10:36-49.
 23. Scholerdt KA, Heiman JR. Perceptions of sexuality as related to sexual functioning and sexual risk in women with different types of childhood abuse histories. *J Trauma Stress* 2003; 16:275-284.
 24. Reissing ED, Binik YM, Khalifé S, et al. Etiological correlates of vaginismus: sexual and physical abuse, sexual knowledge, sexual self-schema and relationship adjustment. *J Sex Marital Ther* 2003;29:47-59.
 25. Leclerc B, Bergeron S, Binik YM, et al. History of sexual and physical abuse in women with dyspareunia: association with pain, psychosocial adjustment and sexual functioning. *J Sex Med* 2010;7:971-980.
 26. Seibel SL, Rosser BRS, Horvath KJ, et al. Sexual dysfunction, paraphilic and their relationship to childhood abuse in men who have sex with men. *Int J Sex Health* 2009; 21:79-86.
 27. Fergusson DM, McLeod GF, Horwood LJ. Childhood sexual abuse and adult developmental outcomes: findings from a 30-year longitudinal study in New Zealand. *Child Abuse Negl* 2013;37:664-674.
 28. Lemieux SR, Byers ES. The sexual well-being of women who have experienced child sexual abuse. *Psychol Women Q* 2008; 32:126-144.
 29. Loeb TB, Rivkin I, Williams JK, et al. Child sexual abuse: associations with the sexual functioning of adolescents and adults. *Annu Rev Sex Res* 2002;13:307-345.
 30. Lutfey KE, Link CL, Litman HJ, et al. An examination of the association of abuse (physical, sexual, or emotional) and female sexual dysfunction: results from the Boston Area Community Health Survey. *Fertil Steril* 2008; 90:957-964.
 31. Laumann EO, West S, Glasser D, et al. Prevalence and correlates of erectile dysfunction by race and ethnicity among men aged 40 or older in the United States: from the male attitudes regarding sexual health survey. *J Sex Med* 2007; 4:57-65.
 32. Holmes WC, Slap GB. Sexual abuse of boys: definition, prevalence, correlates, sequelae, and management. *JAMA* 1998;280:1855-1862.
 33. Najman JM, Dunne MP, Purdie DM, et al. Sexual abuse in childhood and sexual dysfunction in adulthood: an Australian population-based study. *Arch Sex Behav* 2005;34:517-526.
 34. Wolfe DA, Francis KJ, Straatman AL. Child abuse in religiously-affiliated institutions: long-term impact on men's mental health. *Child Abuse Negl* 2006;30:205-212.

35. Berthelot N, Godbout N, Hébert M, et al. Prevalence and correlates of childhood sexual abuse in adults consulting for sexual problems. *J Sex Marital Ther* 2014; 40:434-443.
36. Bhandari S, Winter D, Messer D, et al. Family characteristics and long-term effects of childhood sexual abuse. *Br J Clin Psychol* 2011;50:435-451.
37. Easton SD, Coohey C, O'Leary P, et al. The effect of childhood sexual abuse on psychosexual functioning during adulthood. *J Fam Violence* 2011;26:41-50.
38. Ostovich JM, Sabini J. Timing of puberty and sexuality in men and women. *Arch Sex Behav* 2005;34:197-206.
39. Bancroft J. Biological factors in human sexuality. *J Sex Res* 2002;39:15-21.
40. Robbins CL, Schick V, Reece M, et al. Prevalence, frequency, and associations of masturbation with partnered sexual behaviors among US adolescents. *Arch Pediatr Adolesc Med* 2011;165:1087-1093.
41. Shulman JL, Horne SG. The use of self-pleasure: masturbation and body image among African American and European American women. *Qual Health Res* 2003;27:262-269.
42. Hogarth H, Ingham R. Masturbation among young women and associations with sexual health: an exploratory study. *J Sex Res* 2009;46:558-567.
43. Heywood W, Patrick K, Smith AMA, et al. Associations between early first sexual intercourse and later sexual and reproductive outcomes: a systematic review of population-based data. *Arch Sex Behav* 2014;44:531-569.
44. Haavio-Mannila E, Kontula O. Correlates of increased sexual satisfaction. *Arch Sex Behav* 1997;26:399-419.
45. Woo JST, Brotto LA. Age of first sexual intercourse and acculturation: effects on adult sexual responding. *J Sex Med* 2008;5:571-582.
46. Elmerstig E, Wijma B, Swahnberg K. Young Swedish women's experience of pain and discomfort during sexual intercourse. *Acta Obstet Gynecol Scand* 2009;88:98-103.
47. Rapsey CM. Age, quality, and context of first sex: associations with sexual difficulties. *J Sex Med* 2014;11:2873-2881.
48. Rosenheim E, Neumann M. Personality characteristics of sexually dysfunctioning males and their wives. *J Sex Res* 1981;17:124-138.
49. Quinta-Gomes A, Nobre PJ. Personality traits and psychopathology on male sexual dysfunction: an empirical study. *J Sex Med* 2011;8:461-469.
50. Crisp C, Vaccaro C, Fellner A, et al. The influence of personality and coping on female sexual function: a population survey. *J Sex Med* 2015;12:109-115.
51. Kennedy SH, Dickens SE, Eisfeld BS, et al. Sexual dysfunction before antidepressant therapy in major depression. *J Affect Disord* 1999;56:201-208.
52. Harris J, Cherkas L, Kato B, et al. Normal variations in personality are associated with coital orgasmic infrequency in heterosexual women: a population-based study. *J Sex Med* 2008;5:1183.
53. Peixoto MM, Nobre P. Dysfunctional sexual beliefs: a comparative study of heterosexual men and women, gay men, and lesbian women with and without sexual problems. *J Sex Med* 2014;11:2690-2700.
54. Costa PT, Fagan PJ, Piedmont RL, et al. The five-factor model of personality and sexual functioning in outpatient men and women. *Psychiatry Med* 1992;10:199-215.
55. Schenk J, Pfrang H, Rausche A. Personality traits versus the quality of the marital relationship as the determinant of marital sexuality. *Arch Sex Behav* 1983;12:31-42.
56. Oliveira C, Nobre PJ. The role of trait-affect, depression, and anxiety in women with sexual dysfunction: a pilot study. *J Sex Marital Ther* 2013;39:436-452.
57. Beck AT. Beyond belief: a theory of modes, personality and psychopathology. In: Salkovskis PM, ed. *Frontiers of cognitive therapy*. New York: Guilford; 1996. pp. 1-25.
58. Oliveira C, Nobre PJ. Cognitive structures in women with sexual dysfunction: the role of early maladaptive schemas. *J Sex Med* 2013;10:1755-1763.
59. Nobre PJ, Pinto-Gouveia J. Cognitive schemas associated with negative sexual events: a comparison of men and women with and without sexual dysfunction. *Arch Sex Behav* 2009;38:842-851.
60. Peixoto MM, Nobre P. Cognitive schemas activated in sexual context: a comparative study with homosexual and heterosexual men and women, with and without sexual problems. *Cogn Ther Res* 2014;39:390-402.
61. Quinta Gomes A, Nobre P. Early maladaptive schemas and sexual dysfunction in men. *Arch Sex Behav* 2012; 41:311-320.
62. Kuffel SW, Heiman J. Effects of depressive symptoms and experimentally adopted schemas on sexual arousal and affect in sexually healthy women. *Arch Sex Behav* 2006; 35:160-174.
63. Middleton LS, Kuffel SW, Heiman JR. Effects of experimentally adopted sexual schemas on vaginal response and subjective sexual arousal: a comparison between women with sexual arousal disorder and sexually healthy women. *Arch Sex Behav* 2008;37:950-961.
64. Andersen BL, Cyranowski J. Women's sexual self-schema. *J Pers Soc Psychol* 1994;67:1079-1100.
65. Andersen BL, Cyranowski JM, Espindle D. Men's sexual self-schema. *J Pers Soc Psychol* 1999;76:645-661.
66. Carpenter KM, Andersen BL, Fowler JM, et al. Sexual self schema as a moderator of sexual and psychological outcomes for gynecologic cancer survivors. *Arch Sex Behav* 2009; 38:828-841.
67. Rellini AH, Meston CM. Sexual self-schemas, sexual dysfunction, and the sexual responses of women with a history of childhood sexual abuse. *Arch Sex Behav* 2011; 40:351-362.
68. Janssen E, Bancroft J. The dual control model: the role of sexual inhibition and excitation in sexual arousal and behavior. In: Janssen E, ed. *The psychophysiology of sex*. Bloomington: Indiana University Press; 2007. pp. 197-222.

69. Bancroft J. Central inhibition of sexual response in the male: a theoretical perspective. *Neurosci Biobehav Rev* 1999; 23:763-784.
70. Bancroft J, Graham CA, Janssen E, et al. The dual control model: current status and future directions. *J Sex Res* 2009; 46:121-142.
71. Bancroft J, Herbenick D, Barnes T, et al, Members of BASRT. The relevance of the dual control model to male sexual dysfunction: the Kinsey Institute/BASRT collaborative project. *Sex Relat Ther* 2005;20:13-30.
72. Lykins AD, Janssen E, Newhouse S, et al. The effects of similarity in sexual excitation, inhibition, and mood on sexual arousal problems and sexual satisfaction in newlywed couples. *J Sex Med* 2012;9:1360-1366.
73. Bloemendaal LB, Laan ET. The psychometric properties of the Sexual Excitation/Sexual Inhibition Inventory for women (SESII-W) within a Dutch population. *J Sex Res* 2015;52:69-82.
74. Sanders SA, Graham CA, Milhausen RR. Predicting sexual problems in women: the relevance of sexual excitation and sexual inhibition. *Arch Sex Behav* 2008;37:241-251.
75. Peixoto MM, Nobre P. Personality traits, sexual problems, and sexual orientation: an empirical study. *J Sex Marital Ther*. PMID:25405957. E-pub ahead of print.
76. Nobre PJ, Pinto-Gouveia J. Cognitive and emotional predictors of female sexual dysfunctions: preliminary findings. *J Sex Marital Ther* 2008;34:325-342.
77. Nobre PJ. Determinants of sexual desire problems in women: testing a cognitive-emotional model. *J Sex Marital Ther* 2009;35:360-377.
78. Carvalho J, Nobre P. Gender issues and sexual desire: the role of emotional and relationship variables. *J Sex Med* 2010; 7:2469-2478.
79. Borg C, de Jong PJ, Schultz WW. Vaginismus and dyspareunia: relationship with general and sex-related moral standards. *J Sex Med* 2011;8:223-231.
80. Andrews FM, Abbey A, Halman LJ. Stress from infertility, marriage factors, and subjective well-being of wives and husbands. *J Health Soc Behav* 1991;32:238-253.
81. Lee TY, Sun GH. Psychosocial response of Chinese infertile husbands and wives. *Arch Androl* 2000;45:143-148.
82. Smith JF, Walsh TJ, Shindel AW, et al. Sexual, marital, and social impact of a man's perceived infertility diagnosis. *J Sex Med* 2009;6:2505-2515.
83. Drosdzol A, Skrzypulec V. Evaluation of marital and sexual interactions of Polish infertile couples. *J Sex Med* 2009; 6:3335-3346.
84. Möller A. Infertility and sexuality—an overview of the literature and clinical practice. *Scand J Sexol* 2001;4:75-87.
85. Jain K, Radhakrishnan G, Agrawal P. Infertility and psychosexual disorders: relationship in infertile couples. *Indian J Med Sci* 2005;54:1-7.
86. Carter J, Applegarth L, Josephs L, et al. A cross-sectional cohort study of infertile women awaiting oocyte donation: the emotional, sexual, and quality-of-life impact. *Fertil Steril* 2011;95:711-716.
87. Gao J, Zhang X, Su P, et al. Prevalence and factors associated with the complaint of premature ejaculation and the four premature ejaculation syndromes: a large observational study in China. *J Sex Med* 2013;10:1874-1881.
88. Shindel AW, Nelson CJ, Naughton CK, et al. Sexual function and quality of life in the male partner of infertile couples: prevalence and correlates of dysfunction. *J Urol* 2008; 179:1056-1059.
89. Ohl J, Reder F, Fernandez A, et al. Impact of infertility and assisted reproductive techniques on sexuality. *Gynecol Obstet Fertil* 2009;37:25-32.
90. Wischmann TH. Sexual disorders in infertile couples. *J Sex Med* 2010;7:1868-1876.
91. Furukawa AP, Patton PE, Amato P, et al. Dyspareunia and sexual dysfunction in women seeking fertility treatment. *Fertil Steril* 2012;98:1544-1548.e2.
92. Galhardo A, Pinto-Gouveia J, Cunha M, et al. The impact of shame and self-judgment on psychopathology in infertile patients. *Hum Reprod* 2011;26:2408-2414.
93. Barrett G, Pendry E, Peacock J, et al. Women's sexual health after childbirth. *BJOG* 2000;107:186-195.
94. Thompson JF, Roberts CL, Currie M, et al. Prevalence and persistence of health problems after childbirth: associations with parity and method of birth. *Birth* 2002;29:83-94.
95. Signorello LB, Harlow BL, Chekos AK, et al. Postpartum sexual functioning and its relationship to perineal trauma: a retrospective cohort study of primiparous women. *Am J Obstet Gynecol* 2001;184:881-890.
96. Lurie S, Aizenberg M, Sulema V, et al. Sexual function after childbirth by the mode of delivery: a prospective study. *Arch Gynecol Obstet* 2013;288:785-792.
97. Baksu B, Davas I, Agar E, et al. The effect of mode of delivery on postpartum sexual functioning in primiparous women. *Int Urogynecol J Pelvic Floor Dysfunct* 2007; 18:401-406.
98. De Souza A, Dwyer P, Charity M, et al. The effects of mode delivery on postpartum sexual function: a prospective study. *BJOG* 2015;122:1410-1418.
99. Fehniger JE, Brown JS, Creasman JM, et al. Childbirth and female sexual function later in life. *Obstet Gynecol* 2013; 122:988-997.
100. Gungor S, Baser I, Ceyhan T, et al. Does mode of delivery affect sexual functioning of the man partner? *J Sex Med* 2008; 5:155-163.
101. Hosseini L, Iran-Pour E, Safarinejad MR. Sexual function of primiparous women after elective cesarean section and normal vaginal delivery. *Urol J* 2012;9:498-504.
102. Lydon-Rochelle MT, Holt VL, Martin DP. Delivery method and self-reported postpartum general health status among primiparous women. *Paediatr Perinat Epidemiol* 2001; 15:232-240.
103. Laganà AS, Burgio MA, Ciancimino L, et al. Evaluation of recovery and quality of sexual activity in women during postpartum in relation to the different mode of delivery: a retrospective analysis. *Minerva Ginecol* 2015;67:315-320.

104. Lindau ST, Schumm LP, Laumann EO, et al. A study of sexuality and health among older adults in the United States. *N Engl J Med* 2007;357:762-774.
105. Deng J, Lian Y, Shen C, et al. Adverse life event and risk of cognitive impairment: a 5-year prospective longitudinal study in Chongqing, China. *Eur J Neurol* 2012;19:631-637.
106. Hällström T, Samuelsson S. Changes in women's sexual desire in middle life: the longitudinal study of women in Gothenburg. *Arch Sex Behav* 1990;19:259-268.
107. Hartmann U, Phillipsohn S, Heiser K, et al. Low sexual desire in midlife and older women: personality factors, psychosocial development, present sexuality. *Menopause* 2004;11:726-740.
108. Laumann EO, Waite LJ. Sexual dysfunction among older adults: prevalence and risk factors from a nationally representative US probability sample of men and women 57-85 years of age. *J Sex Med* 2008;5:2300-2311.
109. Lee AM, Chu LW, Chong CS, et al. Relationship between symptoms of androgen deficiency and psychological factors and quality of life among Chinese men. *Int J Androl* 2010; 33:755-763.
110. Pastuszak AW, Badhiwala N, Lipshultz LI, et al. Depression is correlated with the psychological and physical aspects of sexual dysfunction in men. *Int J Impot Res* 2013;25:194-199.
111. Wang C, Nieschlag E, Swerdlow R, et al. Investigation, treatment, and monitoring of late-onset hypogonadism in males: ISA, ISSAM, EAU, EAA, and ASA recommendations. *Eur Urol* 2009;55:121-130.
112. Baldwin K, Ginsberg P, Harkaway RC. Under-reporting of erectile dysfunction among men with unrelated urologic conditions. *Int J Impot Res* 2003;15:87-89.
113. Gott M, Hinchliff S, Galena E. General practitioner attitudes to discussing sexual health issues with older people. *Soc Sci Med* 2004;58:2093-2103.
114. Huang AJ, Luft J, Grady D, et al. The day to day impact of urogenital aging: perspectives from racially/ethnically diverse women. *J Gen Intern Med* 2010;25:45-51.
115. Corona G, Rastrelli G, Maseroli E, et al. Sexual function of the ageing male. *Best Pract Res Clin Endocrinol Metab* 2013; 4:581-601.
116. Rheaume C, Mitty E. Sexuality and intimacy in older adults. *Geriatr Nurs* 2008;29:342-349.
117. Dennerstein L, Dudley E, Burger H. Are changes in sexual functioning during midlife due to aging or menopause? *Fertil Steril* 2001;76:456-460.
118. Avis NE, Zhao X, Johannes C, et al. Correlates of sexual function among multi-ethnic middle-aged women: results from the Study of Women's Health Across the Nation (SWAN). *Menopause* 2005;12:385-398.
119. Gracia CR, Freeman EW, Sammel MD, et al. Hormones and sexuality during transition to menopause. *Obstet Gynecol* 2007;109:831-840.
120. Cawood EH, Bancroft J. Steroid hormones, the menopause, sexuality and well-being of women. *Psychol Med* 1996; 26:925-936.
121. Avis NE, Legault C, Coeytaux RR, et al. A randomized, controlled pilot study of acupuncture treatment for meno-pausal hot flashes. *Menopause* 2008;15:1070-1078.
122. Avis NE. Sexual function and aging in men and women: community and population based studies. *J Gend Specif Med* 2000;3:37-41.
123. Bancroft J, Loftus J, Long JS. Distress about sex: a national survey of women in heterosexual relationships. *Arch Sex Behav* 2003;32:193-208.
124. Hunter MS. Psychological and somatic experience of the menopause: a prospective study. *Psychosom Med* 1990; 52:357-367.
125. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: prevalence and predictors. *JAMA* 1999; 281:537-544.
126. Dennerstein L, Lehert P, Burger H, et al. Factors affecting sexual functioning of women in the mid-life years. *Climacteric* 1999;2:254-262.
127. Fichten CS, Spector I, Libman E. Client attributions for sexual dysfunction. *J Sex Marital Ther* 1988;14:208-224.
128. Simkins-Bullock J, Wildman BG, Bullock WA, et al. Etiological attributions, responsibility attributions, and marital adjustments in erectile dysfunction patients. *J Sex Marital Ther* 1992;18:83-103.
129. Scepkowski L, Wiegel M, Bach A, et al. Attributions for sexual situations in men with and without erectile disorder: evidence from a sex-specific attributional style measure. *Arch Sex Behav* 2005;33:559-569.
130. Weisberg RB, Brown TA, Wincze JP, et al. Causal attributions and male sexual arousal: The impact of attributions for a bogus erectile difficulty on sexual arousal, cognitions, and affect. *J Abnorm Psychol* 2001;110:324-334.
131. Loos VE, Bridges CF, Critelli JW. Weiner's attribution theory and female orgasmic consistency. *J Sex Res* 1987; 23:348-361.
132. Lange JD, Wincze JP, Zwick W, et al. Effects of demand for performance, self-monitoring of arousal, and increased sympathetic nervous system activity on male erectile response. *Arch Sex Behav* 1981;10:443-463.
133. Heiman JR, Rowland DL. Affective and physiological sexual response patterns: the effects of instructions on sexually functional and dysfunctional men. *J Psychosom Res* 1983; 27:105-116.
134. Laan E, Everaerd W, Van-Aanholt M, et al. Performance demand and sexual arousal in women. *Behav Res Ther* 1993; 31:25-35.
135. Creti L, Libman E. Cognitions and sexual expression in the aging. *J Sex Marital Ther* 1989;15:83-101.
136. Palace EM. Modification of dysfunctional patterns of sexual response through autonomic arousal and false physiological feedback. *J Consult Clin Psychol* 1995;63:604-615.
137. Bach AK, Brown AT, Barlow DH. The effects of false negative feedback on efficacy expectancies and sexual arousal in sexually functional males. *Behav Ther* 1999;30:79-95.

138. Stone JM, Clark R, Sbrocco T, et al. The effects of false physiological feedback on tumescence. *Arch Sex Behav* 2009; 38:528-537.
139. McCall K, Meston C. The effects of false positive and false negative physiological feedback on sexual arousal: a comparison of women with or without Sexual Arousal Disorder. *Arch Sex Behav* 2007;36:518-530.
140. Farkas GM, Sine LF, Evans IM. The effects of distraction, performance demand, stimulus explicitness, and personality on objective and subjective measures of male sexual arousal. *Behav Res Ther* 1979;17:25-32.
141. Geer JH, Fuhr R. Cognitive factors in sexual arousal: the role of distraction. *J Consult Clin Psychol* 1976;4:238-243.
142. Abrahamson DJ, Barlow DH, Sakheim DK, et al. Effect of distraction on sexual responding in functional and dysfunctional men. *Behav Ther* 1985;16:503-515.
143. van Lankveld JD, van den Hout M. Increasing neutral distraction inhibits genital but not subjective sexual arousal of sexually functional and dysfunctional men. *Arch Sex Behav* 2004; 33:549-558.
144. Adams AE III, Haynes SN, Brayer MA. Cognitive distraction in female sexual arousal. *Psychophysiology* 1985; 22:689-696.
145. Elliot AN, O'Donohue WT. The effects of anxiety and distraction on sexual arousal in a nonclinical sample of heterosexual women. *Arch Sex Behav* 1997;26:607-624.
146. Morton H, Gorzalka BB. Cognitive aspects of sexual functioning: differences between East Asian-Canadian and Euro-Canadian women. *Arch Sex Behav* 2013;42:1615-1625.
147. Nobre PJ, Pinto-Gouveia J. Differences in automatic thoughts presented during sexual activity between sexually functional and dysfunctional men and women. *J Cogn Ther Res* 2008; 32:37-49.
148. Carvalho J, Nobre P. Biopsychosocial determinants of men's sexual desire—testing an integrative model. *J Sex Med* 2011; 8:754-763.
149. Nobre PJ. Psychological determinants of erectile dysfunction: testing a cognitive-emotional model. *J Sex Med* 2010; 7:1429-1437.
150. Carvalho J, Nobre PJ. Sexual desire in women: an integrative approach regarding psychological, medical, and relationship dimensions. *J Sex Med* 2010;7:1807-1815.
151. Neff LA, Karney BR. How does context affect intimate relationships? Linking external stress and cognitive processes within marriage. *Pers Soc Psychol Bull* 2004;30:134-148.
152. Dove NL, Wiederman MW. Cognitive distraction and women's sexual functioning. *J Sex Marital Ther* 2000;26:67-78.
153. Beck JC, Barlow DH, Sakheim DK, et al. Shock threat and sexual arousal: the role of selective attention, thought content, and affective states. *Psychophysiology* 1987;24:165-172.
154. Hoon P, Wincze JP, Hoon E. A test of reciprocal inhibition: are anxiety and sexual arousal in women mutually inhibitory? *J Abnorm Psychol* 1977;86:65-74.
155. Beggs VE, Calhoun KS, Wolchik SA. Sexual anxiety and female sexual arousal: a comparison of arousal during sexual anxiety stimuli and sexual pleasure stimuli. *Arch Sex Behav* 1987; 16:311-319.
156. Meston CM, Gorzalka BB. The effects of immediate, delayed, and residual sympathetic activation on sexual arousal in women. *Behav Res Ther* 1996;34:143-148.
157. Palace EM, Gorzalka BB. The enhancing effects of anxiety on arousal in sexually dysfunctional and functional women. *J Abnorm Psychol* 1990;99:403-411.
158. Beck JC, Barlow DH. The effects of anxiety and attentional focus on sexual responding—I: cognitive and affective patterns in erectile dysfunction. *Behav Res Ther* 1986; 24:19-26.
159. Beck JC, Barlow DH. The effects of anxiety and attentional focus on sexual responding—I: physiological patterns in erectile dysfunction. *Behav Res Ther* 1986;24:9-17.
160. Meisler AW, Carey MP. Depressed affect and male sexual arousal. *Arch Sex Behav* 1991;20:541-554.
161. Mitchell WB, DiBartolo PM, Brown TA, et al. Effects of positive and negative mood on sexual arousal in sexually functional males. *Arch Sex Behav* 1998;27:197-207.
162. Nobre PJ, Weigel M, Bach AK, et al. Determinants of sexual arousal and accuracy of its self-estimation in sexually functional males. *J Sex Res* 2004;41:363-371.
163. Vilarinho S, Laja P, Carvalho J, et al. Affective and cognitive determinants of women's sexual response to erotica. *J Sex Med* 2014;11:2671-2678.
164. Peterson ZD, Janssen E. Ambivalent affect and sexual response: the impact of co-occurring positive and negative emotions on subjective and physiological sexual responses to erotic stimuli. *Arch Sex Behav* 2007;36:793-807.
165. Peixoto MM, Nobre P. Positive and negative affect during sexual activity: differences between homosexual and heterosexual men and women, with and without sexual problems. *J Sex Marital Ther* 2016;42:4-17.
166. Brauer M, Ter Kuile MM, Laan E. Effects of appraisal of sexual stimuli on sexual arousal in women with and without superficial dyspareunia. *Arch Sex Behav* 2009;38:476-485.
167. Carvalho J, Veríssimo A, Nobre PJ. Cognitive and emotional determinants characterizing women with persistent genital arousal disorder. *J Sex Med* 2013;10:1549-1558.
168. Nobre P, Gouveia JP. Erectile dysfunction: an empirical approach based on Beck's cognitive theory. *Sex Relat Ther* 2000;15:351-366.
169. Ferguson JM. The effects of antidepressants on sexual functioning in depressed patients: a review. *J Clin Psychiatry* 2001;62:22-34.
170. Serretti A, Chiesa A. Treatment-emergent sexual dysfunction related to antidepressants: a meta-analysis. *J Clin Psychopharmacol* 2009;29:259-266.
171. Figueira I, Possidente E, Marques C, et al. Sexual dysfunction: a neglected complication of panic disorder and social phobia. *Arch Sex Behav* 2001;30:369-377.

172. Aksaray G, Yelken B, Kaptanoglu C, et al. Sexuality in women with obsessive compulsive disorder. *J Sex Marital Ther* 2001;27:273-277.
173. Fontanelle LF, de Souza WF, de Menezes GB, et al. Sexual function and dysfunction in Brazilian patients with obsessive-compulsive disorder and social anxiety disorder. *J Nerv Ment Dis* 2007;195:254-257.
174. Beck JG, Barlow DH, Sakheim DK. The effects of attentional focus and partner arousal on sexual responding in functional and dysfunctional men. *Behav Res Ther* 1983;21:1-8.
175. Palace EM, Gorzalka BB. Differential patterns of arousal in sexually functional and dysfunctional women: physiological and subjective components of sexual response. *Arch Sex Behav* 1992;21:135-159.
176. Ter Kuile MM, Vigevano D, Laan E. Preliminary evidence that acute and chronic daily psychological stress affect sexual arousal in sexually functional women. *Behav Res Ther* 2007;45:2078-2089.
177. Hamilton LD, Julian AM. The relationship between daily hassles and sexual function in men and women. *J Sex Marital Ther* 2014;40:379-395.
178. Hamilton LD, Meston CM. Chronic stress and sexual function in women. *J Sex Med* 2013;10:2443-2454.
179. Basson R. The recurrent pain and sexual sequelae of provoked vestibulodynia: a perpetuating cycle. *J Sex Med* 2012;9:2077-2092.
180. Beck AT. Depression: causes and treatment. Philadelphia: University of Pennsylvania; 1967.
181. Hayes RD, Dennerstein L, Bennett CM, et al. Risk factors for female sexual dysfunction in the general population: exploring factors associated with low sexual function and sexual distress. *J Sex Med* 2008;5:1681-1693.
182. Schreiner-Engel P, Schiavi RC. Lifetime psychopathology in individuals with low sexual desire. *J Nerv Ment Dis* 1986;174:646-651.
183. Araujo AB, Durante R, Feldman HA, et al. The relationship between depressive symptoms and male erectile dysfunction: cross-sectional results from the Massachusetts Male Aging Study. *Psychosom Med* 1998;60:458-465.
184. Feldman HA, Goldstein I, Hatzichristou DG, et al. Impotence and its medical and psychosocial correlates: results of the Massachusetts Male Aging Study. *J Urol* 1994;151:54-61.
185. Strand J, Wise TN, Fagan PJ, et al. Erectile dysfunction and depression: category or dimension? *J Sex Marital Ther* 2002;28:175-181.
186. Corona G, Ricca V, Bandini E, et al. Association between psychiatric symptoms and erectile dysfunction. *J Sex Med* 2008;5:458-468.
187. Clayton AH, Maserejian NN, Connor MK, et al. Depression in premenopausal women with HSDD: baseline findings from the HSDD Registry for Women. *Psychosom Med* 2012;74:305-311.
188. Perez-Lopez FR, Fernandez-Alonso AM, Trabalón-Pastor M, et al. Assessment of sexual function and related factors in mid-aged sexually active Spanish women with the six-item Female Sex Function Index. *Menopause* 2012;19:1224-1230.
189. Llaneza P, Fernandez-Inarrea JM, Arnott B, et al. Sexual function assessment in postmenopausal women with the 14-item changes in sexual functioning questionnaire. *J Sex Med* 2011;8:2144-2151.
190. Mezones-Holguin E, Córdova-Marcelo W, Lau-Chu-Fon F, et al. Association between sexual function and depression in sexually active, mid-aged, Peruvian women. *Climacteric* 2011;14:654-660.
191. McPheters JK, Sandberg JG. The relationship among couple relationship quality, physical functioning, and depression in multiple sclerosis patients and partners. *Fam Syst Health* 2010;28:48-68.
192. Shadman Z, Akhoundan M, Poorsoltan N, et al. Factors associated with sexual function in Iranian women with type 2 diabetes mellitus: partner relationship as the most important predictor. *Iran Red Crescent Med J* 2014;16:e14941.
193. Rutte A, van Splunter MM, van der Heijden AA, et al. Prevalence and correlates of sexual dysfunction in men and women with type 2 diabetes. *J Sex Marital Ther* 2015;41:680-690.
194. Lee M, Kim YH, Jeon MJ. Risk factors for negative impacts on sexual activity and function in younger breast cancer survivors. *Psychooncology* 2015;24:1097-1103.
195. Oskay U, Can G, Camci G. Effect of myocardial infarction on female sexual function in women. *Arch Gynecol Obstet* 2015;291:1127-1133.
196. Schouffoer AA, van der Marel J, Ter Kuile MM, et al. Impaired sexual function in women with systemic sclerosis: a cross-sectional study. *Arthritis Rheum* 2009;61:1601-1608.
197. Dunlop BW, Hill E, Johnson BN, et al. Mediators of sexual functioning and marital quality in chronically depressed adults with and without a history of childhood sexual abuse. *J Sex Med* 2015;12:813-823.
198. González G, Sánchez C, Morales F, et al. Niveles de ansiedad y depresión en mujeres con y sin disfunción sexual. Estudio comparativo [[Levels of anxiety and depression in women with and without sexual dysfunction. A comparative study]]. *Psiquis (Mexico)* 1999;16:17-24.
199. Leiblum S, Seehuus M, Goldmeier D, et al. Psychological, medical, and pharmacological correlates of persistent genital arousal disorder. *J Sex Med* 2007;4:1358-1366.
200. Meston CM. Sympathetic nervous system activity and female sexual arousal. *Am J Cardiol* 2000;86:30F-34F.
201. Bodenham L, Hermesh H, Aizenberg D, et al. Sexual function and behavior in social phobia. *J Clin Psychiatry* 2002;63:874-879.
202. Mercan S, Karamustafalioglu O, Ayaydin EB, et al. Sexual dysfunction in female patients with panic disorder alone or with accompanying depression. *Int J Psychiatry Clin Pract* 2006;10:235-240.
203. Van Minnen A, Kampman M. The interaction between anxiety and sexual functioning: A controlled study of sexual functioning in women with anxiety disorders. *Sex Relat Ther* 2000;15:47-57.
204. Kendurkar A, Kaur B. Major depressive disorder, obsessive-compulsive disorder, and generalized anxiety disorder: do

- the sexual dysfunctions differ? *Prim Care Companion J Clin Psychiatry* 2008;10:299-305.
205. Feil M, Richter-Appelt H. Kontrollüberzeugungen und Angst bei heterosexuellen Männern mit einer Erektionssorung [[Control beliefs and anxiety in heterosexual men with erectile disorder an empirical study]]. *Z Sex Forsch* 2002;15:1-20.
206. Mallis D, Moysidis K, Hatzichristou D. Expressions of anxiety in patients with erectile dysfunction. *Int J Impot Res* 2002;14:S87.
207. Kempeneers P, Andrianne R, Bauwens S, et al. Functional and psychological characteristics of Belgian men with premature ejaculation and their partners. *Arch Sex Behav* 2013;42:55-66.
208. Blumentals WA, Gomez-Caminero A, Brown RR, et al. A case-control study of erectile dysfunction among men diagnosed with panic disorder. *Int J Impot Res* 2004;16:299-302.
209. Okulate G, Olayinka O, Dogunro AS. Erectile dysfunction: prevalence and relationship to depression, alcohol abuse and panic disorder. *Gen Hosp Psychiatry* 2003;25:209-213.
210. Tignol J, Martin-Guehl C, Aouizerate B, et al. Social phobia and premature ejaculation: a case-control study. *Depress Anxiety* 2006;23:153-157.
211. Corretti G, Pierucci S, De Scisciolo M, et al. Comorbidity between social phobia and premature ejaculation: study on 242 males affected by sexual disorders. *J Sex Marital Ther* 2006;32:183-187.
212. Rajkumar RP, Kumaran AK. The association of anxiety with the subtypes of premature ejaculation: a chart review. *Prim Care Companion CNS Disord* 2014;16.
213. Hedon F. Anxiety and erectile dysfunction: a global approach to ED enhances results and quality of life. *Int J Impot Res* 2003;15:S16-S19.
214. Morse WI, Morse JM. Erectile impotence precipitated by organic factors and perpetuated by performance anxiety. *Can Med Assoc J* 1982;127:599-601.
215. Seidman SN, Roose SP, Menza MA, et al. Treatment of erectile dysfunction in men with depressive symptoms: results of a placebo-controlled trial with sildenafil citrate. *Am J Psychiatry* 2001;158:1623-1630.
216. Cosgrove DJ, Gordon Z, Bernie JE, et al. Sexual dysfunction in combat veterans with post-traumatic stress disorder. *Urology* 2002;60:881-884.
217. Hirsch KA. Sexual dysfunction in male operation enduring freedom/operation Iraqi freedom patients with severe post-traumatic stress disorder. *Mil Med* 2009;174:520-522.
218. Helmer DA, Beaulieu GR, Houlette C, et al. Assessment and documentation of sexual health issues of recent combat veterans seeking VHA care. *J Sex Med* 2013;10:1065-1073.
219. Kilpatrick DG, Resnick HS, Milanak ME, et al. National estimates of exposure to traumatic events and PTSD prevalence using DSM-IV and DSM-5 criteria. *J Trauma Stress* 2013;26:537-547.
220. Letourneau EJ, Resnick HS, Kilpatrick DG, et al. Comorbidity of sexual problems and posttraumatic stress disorder in female crime victims. *Behav Ther* 1996;27:321-336.
221. Nunnink SE, Goldwaser G, Afari N, et al. The role of emotional numbing in sexual functioning among veterans of the Iraq and Afghanistan wars. *Mil Med* 2010;175:424-428.
222. Zoladz PR, Diamond DM. Current status on behavioral and biological markers of PTSD: a search for clarity in a conflicting literature. *Neurosci Biobehav Rev* 2013;37:860-895.
223. Hosain GM, Latini DM, Kauth M, et al. Sexual dysfunction among male veterans returning from Iraq and Afghanistan: prevalence and correlates. *J Sex Med* 2013;10:516-523.
224. Wilcox SL, Redmond S, Hassan AM. Sexual functioning in military personnel: preliminary estimates and predictors. *J Sex Med* 2014;11:2537-2545.
225. Covington SS, Kohen J. Women, alcohol, and sexuality. *Adv Alcohol Subst Abuse* 1984;4:41-56.
226. George WH, Stoner SA. Understanding acute alcohol effects on sexual behavior. *Annu Rev Sex Res* 2000;11:92-124.
227. Cheng JY, Ng EM, Chen RY, et al. Alcohol consumption and erectile dysfunction: Meta-analysis of population-based studies. *Int J Impot Res* 2007;19:343-352.
228. Thompson IM, Tangen CM, Goodman PJ, et al. Erectile dysfunction and subsequent cardiovascular disease. *JAMA* 2005;294:2996-3002.
229. Bai Q, Xu QQ, Jiang H, et al. Prevalence and risk factors of erectile dysfunction in three cities of China: a community-based study. *Asian J Androl* 2004;6:343-348.
230. Parazzini F, Menchini Fabris F, Bortolotti A, et al. Frequency and determinants of erectile dysfunction in Italy. *Eur Urol* 2000;37:43-49.
231. Johnson SD, Phelps DL, Cottler LB. The association of sexual dysfunction and substance use among a community epidemiological sample. *Arch Sex Behav* 2004;33:55-63.
232. Witting K, Santtila P, Varjonen M, et al. Female sexual dysfunction, sexual distress, and compatibility with partner. *J Sex Med* 2008;5:2587-2599.
233. Cao S, Yin X, Wang Y, et al. Smoking and risk of erectile dysfunction: Systematic review of observational studies with meta-analysis. *PLoS One* 2013;8:e60443.
234. Park MG, Ko KW, Oh MM, et al. Effects of smoking on plasma testosterone level and erectile function in rats. *J Sex Med* 2012;9:472-481.
235. Wu C, Zhang H, Gao Y, et al. The association of smoking and erectile dysfunction: results from the Fangchenggang Area Male Health and Examination Survey (FAMHES). *J Androl* 2012;33:59-65.
236. Harte CB, Meston CM. The inhibitory effects of nicotine on physiological sexual arousal in nonsmoking women: results from a randomized, double-blind, placebo-controlled, cross-over trial. *J Sex Med* 2008;5:1184-1197.
237. Bang-Ping J. Sexual dysfunction in men who abuse illicit drugs: a preliminary report. *J Sex Med* 2009;6:1072-1080.
238. La Pera G, Carderi A, Marianantoni Z, et al. Sexual dysfunction prior to first drug use among former drug addicts and its possible causal meaning on drug addiction: preliminary results. *J Sex Med* 2008;5:164-172.

239. Vallejo-Medina P, Sierra JC. Effect of drug use and influence of abstinence on sexual functioning in a Spanish male drug-dependent sample: a multisite study. *J Sex Med* 2013; 10:333-341.
240. Zaazaa A, Bella AJ, Shamloul R. Drug addiction and sexual dysfunction. *Endocrinol Metab Clin North Am* 2013; 42:585-592.
241. Meston CM, Buss DM. Why humans have sex. *Arch Sex Behav* 2007;36:477-507.
242. Blair KL, Pukall CF, Smith KB, et al. Differential associations of communication and love in heterosexual, lesbian, and bisexual women's perceptions and experiences of chronic vulvar and pelvic pain. *J Sex Marital Ther* 2015;41:498-524.
243. Bois K, Bergeron S, Rosen NO, et al. Sexual and relationship intimacy among women with provoked vestibulodynia and their partners: associations with sexual satisfaction, sexual function, and pain self-efficacy. *J Sex Med* 2013;10:2024-2035.
244. McCabe MP. Intimacy and quality of life among sexually dysfunctional men and women. *J Sex Marital Ther* 1997; 23:276-290.
245. Buckley L, Salisbury R, Taylor J, et al. Let's talk about sexuality and relationships. *N Z J Psychol* 2009;38:19-25.
246. Kelly MP, Strassberg DS, Turner CM. Behavioral assessment of couples' communication in female orgasmic disorder. *J Sex Marital Ther* 2006;32:81-95.
247. MacNeil S, Byers ES. The relationships between sexual problems, communication, and sexual satisfaction. *Can J Hum Sex* 1997;6:277-283.
248. MacNeil S, Byers ES. Role of sexual self-disclosure in the sexual satisfaction of long-term heterosexual couples. *J Sex Res* 2009;46:3-14.
249. Mark KP, Jozkowski KN. The mediating role of sexual and nonsexual communication between relationship and sexual satisfaction in a sample of college-age heterosexual couples. *J Sex Marital Ther* 2013;39:410-427.
250. Mitchell KR, Mercer CH, Ploubidis GB, et al. Sexual function in Britain: Findings from the third National Survey of Sexual Attitudes and Lifestyles (NATSAL-3). *Lancet* 2013; 382:1817-1829.
251. Sanchez DT. Relationship contingency and sexual motivation in women: implications for sexual satisfaction. *Arch Sex Behav* 2011;40:99-110.
252. Muise A, Impett EA, Desmarais S. Getting it on versus getting it over with sexual motivation, desire, and satisfaction in intimate bonds. *Pers Soc Psychol Bull* 2013;30:1320-1332.
253. Byers ES. The interpersonal exchange model of sexual satisfaction: implications for sex therapy with couples. *Can J Counsel* 1999;33:95-111.
254. Lawrence K, Byers ES. Sexual satisfaction in long-term heterosexual relationships: the interpersonal exchange model of sexual satisfaction. *Pers Relat* 1995;2:267-285.
255. Bridges SK, Horne SG. Sexual satisfaction and desire discrepancy in same sex women's relationships. *J Sex Marital Ther* 2007;33:41-53.
256. Heiman JR, Long JS, Smith SN, et al. Sexual satisfaction and relationship happiness in midlife and older couples in five countries. *Arch Sex Behav* 2011;40:741-753.
257. Philip EJ, Nelson C, Temple L, et al. Psychological correlates of sexual dysfunction in female rectal and anal cancer survivors: analysis of baseline intervention data. *J Sex Med* 2013; 10:2539-2548.
258. Sims KA, Meana M. Why did passion wane? A qualitative study of married women's attributions for declines in sexual desire. *J Sex Marital Ther* 2010;36:360-380.
259. Brezsnyak M, Whisman MA. Sexual desire and relationship functioning: the effects of marital satisfaction and power. *J Sex Marital Ther* 2004;30:199-217.
260. McCabe MP, Cobain M. The impact of individual and relationship factors on sexual dysfunction among males and females. *J Sex Marital Ther* 1998;13:131-143.
261. Gershenson DM, Miller AM, Champion VL, et al. Reproductive and sexual function after platinum-based chemotherapy in long-term ovarian germ cell tumor survivors: a Gynecologic Oncology Group Study. *J Clin Oncol* 2007;25:2792-2797.
262. Oberg K, Fugl-Meyer KS. On Swedish women's distressing sexual dysfunctions: some concomitant conditions and life satisfaction. *J Sex Med* 2005;2:169-180.
263. McCabe MP, Goldhammer DL. Demographic and psychological factors related to sexual desire among heterosexual women in a relationship. *J Sex Res* 2012;49:78-87.
264. Cayan S, Bozlu M, Canpolat B, et al. The assessment of sexual functions in women with male partners complaining of erectile dysfunction: does treatment of male sexual dysfunction improve female partner's sexual functions? *J Sex Marital Ther* 2004;30:333-341.
265. Hartmann U, Schedlowski M, Krüger THC. Cognitive and partner-related factors in rapid ejaculation: differences between dysfunctional and functional men. *World J Urol* 2005; 23:93-101.
266. Riley A, Riley E. Premature ejaculation: presentation and associations. An audit of patients attending a sexual problems clinic. *Int J Clin Pract* 2005;59:1482-1487.
267. Byers ES, Grenier G. Premature or rapid ejaculation: heterosexual couples' perceptions of men's ejaculatory behavior. *Arch Sex Behav* 2003;32:261-270.
268. Revicki D, Howard K, Hanlon J, et al. Characterizing the burden of premature ejaculation from a patient and partner perspective: a multi-country qualitative analysis. *Health Qual Life Outcomes* 2008;6:33.
269. Jiann BP, Su CC, Tsai JY. Is female sexual function related to the male partners' erectile function? *J Sex Med* 2013; 10:420-429.
270. Chevret-Méasson M, Lavallée E, Troy S, et al. Improvement in quality of sexual life in female partners of men with erectile dysfunction treated with sildenafil citrate: findings of the Index of Sexual Life (ISL) in a couple study. *J Sex Med* 2009; 6:761-769.
271. Fisher WA, Rosen RC, Mollen M, et al. Improving the sexual quality of life of couples affected by erectile dysfunction: a

- double-blind, randomized, placebo-controlled trial of vardenafil. *J Sex Med* 2005;2:699-708.
272. Shabsigh R, Anastasiades A, Cooper KL, et al. Female sexual dysfunction, voiding symptoms and depression: common findings in partners of men with erectile dysfunction. *World J Urol* 2006;24:653-656.
273. Claes HL, Andrianne R, Opsomer R, et al. The HelpED study: agreement and impact of the erection hardness score on sexual function and psychosocial outcomes in men with erectile dysfunction and their partners. *J Sex Med* 2012; 9:2652-2663.
274. Goldstein I. The mutually reinforcing triad of depressive symptoms, cardiovascular disease, and erectile dysfunction. *Am J Cardiol* 2000;86:41F-45F.
275. Heiman JR, Talley DR, Bailen JL, et al. Sexual function and satisfaction in heterosexual couples when men are administered sildenafil citrate (Viagra) for erectile dysfunction: a multicentre, randomised, double-blind, placebo-controlled trial. *BJOG* 2007;114:437-447.
276. Olsson AM, Speakman MJ, Dinsmore WW, et al. Sildenafil citrate (Viagra) is effective and well tolerated for treating erectile dysfunction of psychogenic or mixed aetiology. *Int J Clin Pract* 2000;54:561-566.
277. Davies S, Katz J, Jackson JL. Sexual desire discrepancies: effects on sexual and relationship satisfaction in heterosexual dating couples. *Arch Sex Behav* 1999;28:553-567.
278. Speckens AE, Hengeveld MW, Lycklama à Nijeholt GL, et al. Psychosexual functioning of partners of men with presumed non-organic erectile dysfunction: cause or consequence of the disorder? *Arch Sex Behav* 1995;24:157-172.
279. Smith KB, Pukall CF. Sexual function, relationship adjustment, and the relational impact of pain in male partners of women with provoked vulvar pain. *J Sex Med* 2014;11:1283-1293.
280. Smith KB, Tripp D, Pukall C, et al. Predictors of sexual and relationship functioning in couples with chronic prostatitis/chronic pelvic pain syndrome. *J Sex Med* 2007;4:734-744.
281. Couper J, Bloch S, Love A, et al. Psychosocial adjustment of female partners of men with prostate cancer: a review of the literature. *Psychooncology* 2006;15:937-953.
282. Harden J, Northouse L, Cimprich B, et al. The influence of developmental life stage on quality of life in survivors of prostate cancer and their partners. *J Cancer Surviv* 2008;2:84-94.
283. Letts C, Tamlyn K, Byers ES. Exploring the impact of prostate cancer on men's sexual well-being. *J Psychosoc Oncol* 2010; 28:490-510.
284. Arenhall E, Kristofferzon ML, Fridlund B, et al. The female partners' experiences of intimate relationship after a first myocardial infarction. *J Clin Nurs* 2011;20:1677-1684.
285. Mark KP, Murray SH. Gender differences in desire discrepancy as a predictor of sexual and relationship satisfaction in a college sample of heterosexual romantic relationships. *J Sex Marital Ther* 2012;38:198-215.
286. Willoughby BJ, Farero AM, Busby DM. Exploring the effects of sexual desire discrepancy among married couples. *Arch Sex Behav* 2014;43:551-562.
287. Stephenson KR, Meston CM. The young and the restless? Age as a moderator of the association between sexual desire and sexual distress in women. *J Sex Marital Ther* 2012; 38:445-457.
288. Desrochers G, Bergeron S, Khalifé S, et al. Provoked vestibulodynia: psychological predictors of topical and cognitive-behavioral treatment outcome. *Behav Res Ther* 2010; 48:106-115.
289. Rosen N, Bergeron S, Leclerc B, et al. Woman and partner-perceived partner responses predict pain and sexual satisfaction in provoked vestibulodynia (PVD). *J Sex Med* 2010; 7:3715-3724.
290. Rosen NO, Bergeron S, Glowacka M, et al. Harmful or helpful: perceived solicitous and facilitative partner responses are differentially associated with pain and sexual satisfaction in women with provoked vestibulodynia. *J Sex Med* 2012; 9:2351-2360.
291. Meana M, Hall KSK, Binik YM. Sex therapy in transition: are we there yet? In: Binik M, Hall KSK, eds. *Principles and practice of sex therapy* 5th ed. New York: Guilford Press; 2014. pp. 541-557.
292. Stulhofer A, Busko V, Brouillard P. Development and bicultural validation of the New Sexual Satisfaction Scale. *J Sex Res* 2010;47:257-268.
293. Abraham L, Symonds T, May K, et al. Psychometric validation of gender nonspecific sexual confidence and sexual relationship scales in men and women. *J Sex Med* 2009; 6:2244-2254.
294. Derogatis LR, Rosen R, Leiblum S, et al. The Female Sexual Distress Scale (FSDS): initial validation of a standardized scale for assessment of sexually related personal distress in women. *J Sex Marital Ther* 2002;28:317-330.
295. Meston CM, Trapnell P. Development and validation of a five-factor sexual satisfaction and distress scale for women: the Sexual Satisfaction Scale for Women (SSS-W). *J Sex Med* 2005;2:66-81.
296. Tabatabaie A. 'Does sex therapy work? How can we know?' Measuring outcomes in sex therapy. *Sex Relat Ther* 2014; 29:269-279.
297. McDonagh LK, Bishop CJ, Brockman M, et al. A systematic review of sexual dysfunction measures for gay men: How do current measures measure up? *J Homosex* 2014; 61:781-816.
298. Derogatis LR, Komer L, Katz M, et al. Treatment of hypoactive sexual desire disorder in premenopausal women: efficacy of flibanserin in the VIOLET study. *J Sex Med* 2012; 9:1074-1085.
299. Brotto LA, Bitzer J, Laan E, et al. Women's sexual desire and arousal disorders. *J Sex Med* 2010;7:586-614.
300. Bancroft J. Human sexuality and its problems. 3rd ed. Edinburgh: Churchill Livingston; 2009.
301. Bergeron S, Khalifé S, Glazer HL, et al. Surgical and behavioral treatments for vestibulodynia: two-and-one-half year follow-up and predictors of outcome. *Obstet Gynecol* 2008;111:159-166.

302. Bergeron S, Khalifé K, Dupuis M, et al. A randomized clinical trial comparing group cognitive-behavioral therapy and a topical steroid for women with dyspareunia. *J Consult Clin Psychol*. In press.
303. Ter Kuile MM, Melles R, de Groot HE, et al. Therapist-aided exposure for women with lifelong vaginismus: a randomized waiting-list control trial of efficacy. *J Consult Clin Psychol* 2013;81:1127-1136.
304. Althof SE. What's new in sex therapy. *J Sex Med* 2010;7:5-13.
305. Binik YM, Hall KSK. Introduction: the future of sex therapy. In: Binik YM, Hall KSK, eds. *Principles and practice of sex therapy*. 5th ed. New York: Guilford Press; 2014. pp. 1-11.
306. Rosen NO, Bergeron S, Sadikaj G, et al. Relationship satisfaction moderates the associations between male partner responses and depression in women with vulvodynia: a dyadic daily experience study. *Pain* 2014;155:1374-1383.
307. Frühauf S, Gerger H, Schmidt HM, et al. Efficacy of psychological interventions for sexual dysfunction: a systematic review and meta-analysis. *Arch Sex Behav* 2013;42:915-933.
308. Trudel G, Marchand A, Ravart M, et al. The effect of a cognitive-behavioral group treatment program on hypoactive sexual desire in women. *Sex Relat Ther* 2001;16:145-164.
309. Günzler C, Berner MM. Efficacy of psychosocial interventions in men and women with sexual dysfunctions—a systematic review of controlled clinical trials: part 2—the efficacy of psychosocial interventions for female sexual dysfunction. *J Sex Med* 2012;9:3108-3125.
310. Brotto LA, Erskine Y, Carey M, et al. A brief mindfulness-based cognitive behavioral intervention improves sexual functioning versus wait-list control in women treated for gynecologic cancer. *Gynecol Oncol* 2012;125:320-325.
311. Brotto LA, Basson R. Group mindfulness-based therapy significantly improves sexual desire in women. *Behav Res Ther* 2014;57:43-54.
312. Berner M, Günzler C. Efficacy of psychosocial interventions in men and women with sexual dysfunctions—a systematic review of controlled clinical trials: part 1—the efficacy of psychosocial interventions for male sexual dysfunction. *J Sex Med* 2012;9:3089-3107.
313. Ishak WW, Bokarius A, Jeffrey JK, et al. Disorders of orgasm in women: a literature review of etiology and current treatments. *J Sex Med* 2010;7:3254-3268.
314. Eichel W, Eichel MA, Kule S. The technique of coital alignment and its relation to female orgasmic response and simultaneous orgasm. *J Sex Marital Ther* 1988;14:129-141.
315. Hurlbert DF, Apt C. The coital alignment technique and directed masturbation: a comparative study on female orgasm. *J Sex Marital Ther* 1995;21:21-29.
316. Melnik T, Soares BG, Nasello AG. The effectiveness of psychological interventions for the treatment of erectile dysfunction: systematic review and meta-analysis, including comparisons to sildenafil treatment, intracavernosal injection, and vacuum devices. *J Sex Med* 2008;5:2562-2574.
317. Perelman MA. Erectile dysfunction and depression: screening and treatment. *Urol Clin North Am* 2011;38:125-139.
318. Cuijpers P, van Straten A, van Oppen P, et al. Are psychological and pharmacologic interventions equally effective in the treatment of adult depressive disorders? A meta-analysis of comparative studies. *J Clin Psychiatry* 2008;69:1675-1685.
319. Abdo CH, Afif-Abdo J, Otani F, et al. Sexual satisfaction among patients with erectile dysfunction treated with counseling, sildenafil, or both. *J Sex Med* 2008;5:1720-1726.
320. Melnik T, Abdo CH. Psychogenic erectile dysfunction: comparative study of three therapeutic approaches. *J Sex Marital Ther* 2005;31:243-255.
321. Althof SE, Leiblum SR, Chevret-Measson M, et al. Psychological and interpersonal dimensions of sexual function and dysfunction. *J Sex Med* 2005;2:793-800.
322. Melnik T, Althof S, Atallah AN, et al. Psychosocial interventions for premature ejaculation. *Cochrane Database Syst Rev* 2011;8:CD008195.
323. Delmonte MM. Case reports on the use of meditative relaxation as an intervention strategy with retarded ejaculation. *Biofeedback Self Regul* 1984;9:209-214.
324. Hawton K. *Sex therapy: a practical guide*. Oxford: Oxford University Press; 1989.
325. Richardson D, Goldmeier D; BASHH Special Interest Group for Sexual Dysfunction. Recommendations for the management of retarded ejaculation: BASHH Special Interest Group for Sexual Dysfunction. *Int J STD AIDS* 2006;17:7-13.
326. Bettocchi C, Verze P, Palumbo F, et al. Ejaculatory disorders: pathophysiology and management. *Nat Clin Pract Urol* 2008;5:93-103.
327. Meuleman EJH, van Lankveld JJDM. Hypoactive sexual desire disorder: an underestimated condition in men. *BJU Int* 2005;95:291-296.
328. Althof S. Sex therapy in the age of pharmacotherapy. *Annu Rev Sex Res* 2006;17:116-132.
329. Perelman M. Combination therapy for sexual dysfunction: Integrating sex therapy and pharmacotherapy. In: Balon R, Segraves R, eds. *Handbook of sexual dysfunction*. New York: Taylor and Francis; 2005. pp. 13-41.
330. Rosen R. Medical and psychological interventions for erectile dysfunction: toward a combined treatment. In: Leiblum S, Rosen R, eds. *Principles and practices of sex therapy*. 3rd ed. New York: Guilford Press; 2000.
331. McCarthy BW. Integrating Viagra into cognitive-behavioral couples sex therapy. *J Sex Edu Ther* 1998;23:302-308.
332. Althof S. New roles for mental health clinicians in the treatment of erectile dysfunction. *J Sex Educ Ther* 1998;23:229-231.
333. Banner LL, Anderson RU. Integrated sildenafil and cognitive-behavior sex therapy for psychogenic erectile dysfunction: a pilot study. *J Sex Med* 2007;4:1117-1125.
334. Hendrick SS. A generic measure of relationship satisfaction. *J Marriage Fam* 1988;50:93-98.

335. Aubin S, Heiman J, Berger R, et al. Comparing sildenafil alone vs sildenafil plus brief couple sex therapy on erectile dysfunction and couples' sexual and marital quality of life: a pilot study. *J Sex Marital Ther* 2009;35:122-143.
336. Phelps JS, Jain A, Monga M. The PsychoedPlusMed approach to erectile dysfunction treatment: the impact of combining a psychoeducational intervention with sildenafil. *J Sex Marital Ther* 2004;30:305-314.
337. Schmidt HM, Munder T, Gerger H, et al. Combination of psychological intervention and phosphodiesterase-5 inhibitors for erectile dysfunction: a narrative review and meta-analysis. *J Sex Med* 2014;11:1376-1391.
338. Hartman U, Langer D. Combination of psychosexual therapy and intra-penile injections in the treatment of erectile dysfunctions: rationale and predictors of outcome. *J Sex Educ Ther* 1993;19:1-12.
339. Lottman PE, Hendriks JC, Vrugink PA, et al. The impact of marital satisfaction and psychological counselling on the outcome of ICI-treatment in men with ED. *Int J Impot Res* 1998;10:83-87.
340. van der Windt F, Dohle GR, van der Tak J, et al. Intra-cavernosal injection therapy with and without sexological counselling in men with erectile dysfunction. *BJU Int* 2002;89:901-904.
341. Titta M, Tavolini IM, Moro FD, et al. Sexual counseling improved erectile rehabilitation after non-nerve-sparing radical retropubic prostatectomy or cystectomy—results of a randomized prospective study. *J Sex Med* 2006;3:267-273.
342. Wylie KR, Jones RH, Walters S. The potential benefit of vacuum devices augmenting psychosexual therapy for erectile dysfunction: a randomized controlled trial. *J Sex Marital Ther* 2003;29:227-236.
343. Li P, Zhu GS, Xu P, et al. Interventional effect of behaviour psychotherapy on patients with premature ejaculation. *Zhonghua Nan Ke Xue* 2006;12:717-719.
344. Shao X, Li J. Clinical study on treatment of premature ejaculation with paroxetine and behavior therapy. *Chin J Androl* 2008;22:18-20.
345. Yuan P, Dai J, Yang Y, et al. [A comparative study on treatment for premature ejaculation: citalopram used in combination with behavioral therapy versus either citalopram or behavioral therapy alone]. *Chin J Androl* 2008;22:35-38.
346. Kiss A, Sulya B, Szász AM, et al. Long-term psychological and sexual outcomes of severe penile hypospadias repair. *J Sex Med* 2011;8:1529-1539.
347. Callens N, De Cuypere G, Van Hoecke E, et al. Sexual quality of life after hormonal and surgical treatment, including phalloplasty, in men with micropenis: a review. *J Sex Med* 2013;10:2890-2903.
348. Schonbacher V, Schweizer K, Rustige L, et al. Sexual quality of life of individuals with 46,XY disorders of sex development. *J Sex Med* 2012;3154-3170.
349. Pauletti ER, Cooper P, Perry DG. Influences of gender identity on children's maltreatment of gender-nonconforming peers: A person × target analysis of aggression. *J Person and Soc Psychol* 2014;106:843-866.
350. Rajkumar RP. The impact of disrupted childhood attachment on the presentation of psychogenic erectile dysfunction: An exploratory study. *J Sex Med* 2015;12:798-803.
351. Reissing ED, Andruff HL, Wentland JJ. Looking back: the experience of first sexual intercourse and current sexual adjustment in young heterosexual adults. *J Sex Res* 2012;49:27-35.
352. Baumann P, Bélanger RE, Akre C, et al. Increased risks of early sexual initiators: time makes a difference. *Sex Health* 2011;8:431-435.
353. Rowland DL, Myers AL, Adamski BA, et al. Role of attribution in affective responses to a partnered sexual situation among sexually dysfunctional men. *BJUI* 2013;111:103-109.
354. Nelson AL, Purdon C. Non-erotic thoughts, attentional focus, and sexual problems in a community sample. *Arch Sex Behav* 2011;40:395-406.
355. Oliveira C, Laja P, Carvalho J, et al. Predictors of men's sexual response to erotic film stimuli: The role of affect and self-reported thoughts. *J Sex Med* 2014;11:2701-2708.
356. Pujols Y, Meston CM, Seal BN. The association between sexual satisfaction and body image in women. *J Sex Med* 2010;7:905-916.
357. Purdon C, Watson C. Non-erotic thoughts and sexual functioning. *Arch Sex Behav* 2011;40:891-902.
358. Rutte A, van Splunter MM, van der Heijden AA, et al. Prevalence and correlates of sexual dysfunction in men and women with Type 2 Diabetes. *J Sex Marital Ther* 2015;41:680-690.
359. Dettore D, Pucciarelli M, Santarnechi E. Anxiety and female sexual functioning: an empirical study. *J Sex Marital Ther* 2013;39:216-240.
360. Punnen S, Cowan JE, Dunn L, et al. A longitudinal study of anxiety, depression and distress as predictors of sexual and urinary quality of life in men with prostate cancer. *BJU Int* 2013;112:E67-E75.
361. Kalmbach DA, Kingsberg SA, Ciesla JA. How changes in depression and anxiety symptoms correspond to variations in female sexual response in a nonclinical sample of young women: a daily diary study. *J Sex Med* 2014;11:2915-2927.
362. Goldstein I, Fisher W, Sand M, et al. Women's sexual function improves when partners are administered vardenafil for erectile dysfunction; A prospective randomized, double-blind, placebo-controlled trial. *J Sex Med* 2005;2:819-832.
363. Hundertmark J, Esterman A, Ben-Tovim D, et al. The South Australian couples sildenafil study: double-blind, parallel-group randomized controlled study to examine the psychological and relationship consequences of sildenafil use in couples. *J Sex Med* 2007;4:1126-1135.
364. Conaglen HM, Conaglen JV. Investigating women's preference for sildenafil or tadalafil use by their partners with erectile dysfunction: the partners' preference study. *J Sex Med* 2008;5:1198-1207.