SEXUAL MEDICINE REVIEWS REVIEW

Couplepause: A New Paradigm in Treating Sexual Dysfunction During Menopause and Andropause

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ABSTRACT

Background: At midlife and beyond, both men and women face organic changes that can affect sexual functioning. For women, ovarian exhaustion causes estrogen deficiency, leading to genitourinary syndrome of menopause, which may include vaginal dryness, irritation/itching, inadequate lubrication, and dyspareunia. Hypoactive sexual desire disorder also can result from biopsychosocial factors. For men, erectile dysfunction prevalence increases with age, and some men develop testosterone deficiency.

Aim: In this narrative review, we summarize the literature on how menopause and andropause can affect the sexual health of both the patient and partner and describe a new paradigm ("couplepause") for addressing the sexual health needs of the aging couple as a whole.

Methods: We combined a literature review conducted using PubMed with insights garnered from our own clinical experiences.

Outcomes: We reviewed publications relating to couples-based approaches to sexual dysfunction, male perceptions of female sexual dysfunction, female perceptions of male sexual dysfunction, interactions between male and female sexual dysfunctions, sexual dysfunction and midlife changes in homosexual couples, and impact of pharmacologic treatments for sexual dysfunctions on the couple's sexual health.

Results: Both members of a couple may experience age-related changes concurrently and interdependently. In such cases, it is unhelpful, and sometimes detrimental, to treat the symptoms for only one member of the couple without also treating the other. Therefore, as an evolution of the couple-oriented approaches of Masters and Johnson and others, we introduce the concept of couplepause and the need for a new diagnostic and therapeutic paradigm that addresses the sexual health needs of the aging couple as a whole rather than treating the individual patient in isolation.

Conclusion: Taking a couple-oriented approach to evaluate and manage couplepause in the latter half of life can dramatically and simultaneously help both members of the couple to improve sexual satisfaction and intimacy. **Jannini EA, Nappi RE. Couplepause: A New Paradigm in Treating Sexual Dysfunction During Menopause and Andropause. Sex Med Rev 2018;6:384–395**.

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Key Words: Menopause; Andropause; Sexual health; Sexual dysfunction; Genitourinary syndrome of menopause; Erectile dysfunction; Couple

INTRODUCTION

In midlife and beyond, women and men experience changes that can affect their own and partner's sexual health and relationships. Clinicians should approach these changes as a couple's issue for patients who are in long-term, stable relationships. It should be noted that sexual dysfunctions may also occur among the many aging individuals who are not in such relationships, and those needs should continue to be handled on an individual basis.

Diminished estrogen levels post-menopause can lead to genitourinary syndrome of menopause (GSM), which affects about 50% of post-menopausal women.[1] GSM encompasses vulvar-vaginal atrophy (VVA) symptoms (Table 1)[1-9] and urinary symptoms.[2,3] Common post-menopausal sexual dysfunctions include hypoactive sexual desire disorder (HSDD) and dyspareunia,[10] which may result from a complex interplay among biopsychosocial factors. Some women develop female androgen insufficiency syndrome (low testosterone), which can cause low libido and mood.[11] Diagnosis of this syndrome is challenging

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Table 1. Effects of menopause and andropause on sexual health

Vulvar/vaginal and sexual changes due to estrogen deficiency in menopause[1–6]	Sexual changes due to declining testosterone levels in andropause[7–9]
• Genital dryness, itching, irritation	• Erectile dysfunction
• Insufficient lubrication during sexual activity	• Reduced frequency of morning erections
• Post-coital bleeding	• Decreased libido
• Narrowing/shortening of vaginal vault	• Impaired ejaculatory and orgasmic function
• Loss of pubic hair	• Loss of pubic and other body hair
• Atrophy of labia and loss of vulvar fat; development of vulvar fissures	• Decreased endurance, greater fatigue
• Other vaginal changes (thinning of vaginal epithelium, development of petechiae or ulcerations, loss of rugae, increased pH, diminished elasticity, increased collage turnover, decreased blood flow, changes to native bacterial populations)	
• Recession, phimosis, or excessive exposure of clitoris	
• Hypoactive sexual desire disorder	
• Dyspareunia	

because sensitive assays for measuring testosterone in women are not widely available, and a normal reference range is poorly defined.[11] Sexual symptoms post-menopause usually persist, and affect >60% of women in their early 60s.[12]

At midlife and beyond, men generally experience a gradual decline in testosterone levels, sometimes referred to as andropause.[7] Because not all men develop testosterone deficiency and not all men with below-normal testosterone levels have clinical symptoms,[7,13] the term "andropause" remains somewhat controversial and some professional associations prefer the terms "late-onset hypogonadism"[8] or "testosterone deficiency."[9] Nonetheless, "andropause" is a well-recognized term by patients and physicians alike, as well as some professional societies such as the European Menopause and Andropause Society. Diminished testosterone activity may cause physical and emotional changes (Table 1) that can affect men's sexual health and intimate relationships, including erectile dysfunction (ED), decreased libido, and impaired ejaculatory or orgasmic function.[7,9] ED correlates with age: the incidence is about 6–15% at ages 40–49 years, 19–22% at 50–59 years, 30–44% at 60–69 years, and 37%–70% among men age ≥70 years.[14–16]

Midlife physical, psychological, and relational changes affect the sexual health of both members of a couple, whether they occur in one member or both. In our clinical experience, and some reports,[17,18] sexual symptoms in one partner may worsen the other partner's symptoms (eg, not feeling desired can lead to doubts about one's attractiveness and contribute to lack of desire, or if the male partner has untreated ED, the female partner may be less motivated to treat VVA). In addition, the International Survey of Relationships, an international survey of 200 midlife couples, found that a person was more likely to be sexually satisfied and happy in their relationship if their partner reported good health, good sexual functioning, and happiness with the relationship, although the partner's sexual functioning had a greater influence on male sexual satisfaction vs female sexual satisfaction.[18,19] Therefore, by addressing sexual health needs of a patient without considering the potential impact on or contributions of the partner's health, clinicians are not fulfilling real-life needs of older couples (Figure 1A). We suggest that experts in sexual medicine, andrologists, obstetricians/gynecologists, endocrinologists, urologists, and other physicians and

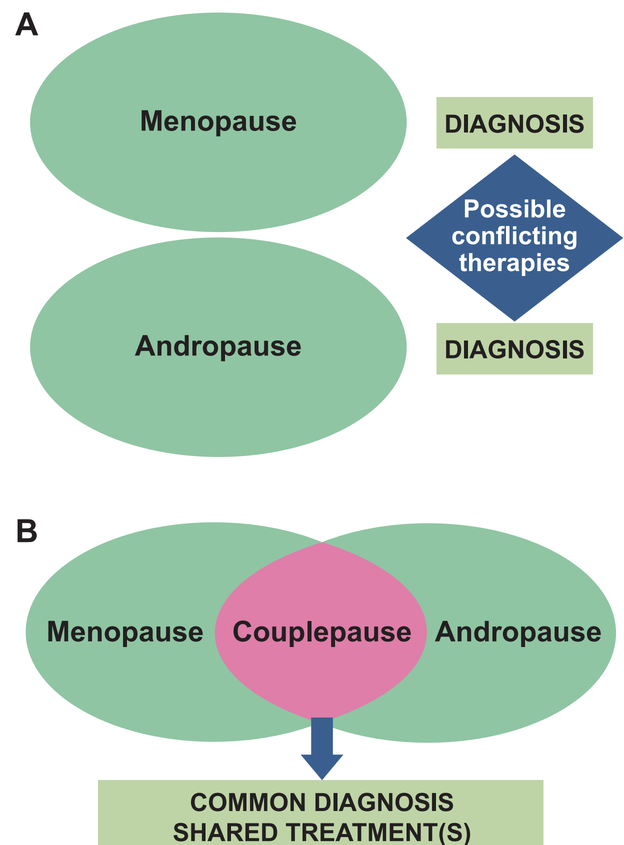

Figure 1. Current approach (A) to managing menopause and andropause. Couplepause (B) is the new diagnostic and therapeutic paradigm where the risks of conflicting therapies are minimized and the therapeutic success improved. Figure 1 is available in color online at www.smr.jsexmed.org.

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psychosexologists who treat menopause or andropause symptoms begin thinking in terms of couplepause, a new paradigm that considers the needs of the aging couple as a whole (Figure 1B), in keeping with a holistic perspective.[20] It should be noted that "couplepause" is a term—and an approach—meant to apply to stable couples in which both partners are experiencing midlife or later changes related to menopause and andropause.

HISTORICAL PERSPECTIVE

Couples-based approaches to managing sexual dysfunction have long been advocated by renowned sexual health researchers and therapists. In the 1970s, Masters and Johnson[21] emphasized that "there is no such thing as an uninvolved partner in any marriage in which there is some form of sexual inadequacy" and called for the marital relationship itself to be considered as the patient rather than the individual husband and wife. During that period, Leiblum and Ersner-Hershfield[22] reported that group therapy including masturbation training for women with sexual dysfunction can improve orgasmic ability, body acceptance, and responsiveness to the partner regardless of whether the partner was present at the sessions, but reported that male partner presence did enhance the couple's marital and sexual satisfaction, and resulted in improved ejaculatory control in some of the male partners. Later, after the introduction of phosphodiesterase type 5 (PDE5) inhibitors, some experts including Althof et al,[23,24] Basson et al,[25] and Leiblum and Wiegel[26] continued to stress the importance of including both members of the couple in treatment and to take various patient, partner, and relationship variables into account when managing male or female sexual dysfunction.

In discussing the effects of the aging process on sex and intimacy in 1990, Kaplan[27] noted the need for each member of the couple to adapt to their partner's age-related physical and sexual changes, and recommended couples-based therapy. However, despite its long history in the sex therapy medical literature, a couples-oriented approach to treating sexual dysfunction in the climacteric couple has not been widely adopted, nor has it been used systematically to understand how sexual dysfunction of the aging male can amplify the sexual dysfunction of the aging female partner and vice versa. Here, we extend the paradigm to specifically apply to couples concurrently experiencing midlife or later changes that can impact sexual function, and encourage its wider use by not only sex therapists but also gynecologists, andrologists, endocrinologists, urologists, gerontologists, general practitioners, and others who traditionally see these individual patients in isolation.

MEN AND WOMEN'S PERCEPTIONS OF THEIR PARTNER'S MENOPAUSE/ANDROPAUSE

Surveys indicate that GSM and ED can impact the affected person's sexual functioning and related quality of life (QoL).[28–34] Fewer surveys have addressed how these conditions affect the partner and couple.

MALE PARTNERS' PERCEPTIONS OF MENOPAUSE AND FEMALE SEXUAL DYSFUNCTION

In interviews, women indicated that their partners focused on menopausal symptoms that most affected the men, expected women to control menopausal symptoms, and sometimes pressured women to pursue treatment.[35] In a few cases, men were considered supportive, nurturing, and interested in learning more about their partners' experiences.[35]

Few studies collected information directly from men about their partner's GSM. One exception is the European and North American Clarifying Vaginal Atrophy's Impact on Sex and Relationships (CLOSER) study, which interviewed women with VVA (N = 4,100, aged 55–65 years) and men whose partners had VVA (N = 4,100).[36] Results revealed communication gaps: 28% of women did not tell their partners about their vaginal discomfort, with the primary reasons being that "it was just a natural part of growing older" (52%), embarrassment (21%), or concerns about ruining intimacy (21%). While 58% of the women reported using non-hormonal vaginal moisturizers or lubricants, only 15% of men knew their partners used such products. However, 82% of men wanted to know about their partner's vaginal discomfort, and more men (68%) than women (58%) were comfortable discussing VVA.

CLOSER also revealed that VVA adversely affects both members of the couple. According to women, symptoms of VVA led them to avoid intimacy (62%), have less sex (58%), and have less satisfying sex (49%).[36] Men were more likely to say they avoided intimacy (76%) and had less sex because of their partner's VVA (61%), but less likely to report diminished satisfaction (28%).

FEMALE PARTNERS' PERCEPTIONS OF ANDROPAUSE AND MALE SEXUAL DYSFUNCTION

Several surveys asked women how their partner's ED affected their sexual lives. The international Female Experience of Men's Attitudes to Life Events and Sexuality (FEMALES) study interviewed 293 female partners of men with ED who had participated in the Men's Attitudes to Life Events and Sexuality study.[37] Women were more likely to believe there are ways to obtain sexual gratification that do not require a good erection; however, in some couples, women were more likely to say the ED had been devastating or that they would "give almost anything to cure it."[38] Women reported having less intercourse and experiencing reductions in sexual desire, arousal, orgasm, and satisfaction after their partner developed ED.[37]

Women's beliefs about ED may influence whether their partners seek treatment. In the FEMALES study, men were more likely to discuss ED with a physician and try PDE5 inhibitor therapy if their partners perceived the ED to be permanent, moderate to severe, or attributable to another medical problem or medication.[39] Men were more likely to consult a physician for

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treatment if their partner had a high level of sexual satisfaction prior to ED onset, reported that the ED had impacted her QoL, had positive perceptions about treating ED, or had a satisfactory consultation with her own physician about her partner's ED.[39]

In a survey of 100 women in New Zealand whose partners had ED, the women exhibited concern for their partner and felt responsible for providing reassurance.[40] Those who wanted to continue their sexual relationship made efforts to help their partners relax and feel aroused, and to find strategies to improve their sexual interactions. The women commonly said their partner's ED did not interfere with their overall relationship, especially if they shared a deep level of non-sexual intimacy; however, their partner's ED caused some women to question their own attractiveness, their partner's fidelity, and whether the relationship was worth sustaining. Some women also said sex had become something to be endured or avoided.[40]

Conaglen and Conaglen[41] surveyed New Zealand women aged 32–72 years who were in stable relationships with men aged 41–79 years who had ED. Many of the women experienced frustration, a sense of inadequacy, self-blame, insecurity about their attractiveness, and sadness at the loss of intimacy. The women expressed concern for their partners and took steps to minimize the men's distress. About half of the women had stopped having sex because of their partner's ED and 35% had experienced loss of intimacy, sharing, and closeness; however, about one-quarter of women said their partner's ED had led to improvements in intimacy (eg, more cuddling and affection), and more satisfying sexual expression less focused on orgasm.

Other male sexual dysfunctions may affect couples' sexual health. An internet-based survey revealed that women whose partners had premature ejaculation were more likely to report sexual distress compared with women whose partners did not have premature ejaculation (odds ratio 7.12, 95% CI, 5.98–10.14, $P < .0001$).[17]

INTERACTIONS BETWEEN MALE AND FEMALE SEXUAL DYSFUNCTIONS

Interaction between sexual dysfunctions in both members of a couple is supported in the literature. In a survey of 96 New Zealand women whose partners had ED, 48 (50%) had female sexual dysfunction.[42] Of these 48 women, 14 attributed their sexual dysfunction exclusively to their partner's ED, 7 reported vaginal dryness attributable to their hormonal state, 5 reported low sexual desire resulting from their partner's ED, and 1 reported pain resulting from her partner's poor-quality erection. Many, but not all, of the women experienced improved sexual function when their partner's ED was treated.

In a survey of >2,300 Italian men, a significant association was found between perceived moderate to severe female hypoactive sexual desire and severe ED.[43] Menopausal symptoms were one factor the men thought contributed to their partner's lack of desire. Similarly, a retrospective cross-sectional study of >2,300 Italian men with ED found that score on the relationship domain of the Structured Interview on Erectile Dysfunction, which asks about female partner's menopausal symptoms, physical health conditions, ability to achieve orgasm, and level of sexual interest, was significantly related to the men's testosterone levels, symptoms of mild hypogonadism, penile blood flow, and intercourse frequency.[44]

A cross-sectional study of 632 couples in Taiwan (mean age [range], 39.5 [18–80] years for men and 36.9 [21–67] years for women) found mild to moderate correlations between men's scores on the International Index of Erectile Function and their partners' scores on the Female Sexual Function Index (FSFI).[45] A retrospective study of 156 women found that the exclusive presence of ED, or premature or delayed ejaculation, may not act as a primary contributing factor to female sexual dysfunction, based on FSFI scores.[46] Rather, women's sexual function was mostly impaired by a perceived reduction in their partner's sexual interest, a frequent symptom of andropause and testosterone deficiency. Hence, the new concept of couplepause should incorporate relational aspects.

Finally, male and female sexual symptoms are frequently multiplicative rather than additive, such that symptoms in one partner may exacerbate symptoms in the other.[47] In our experience, this is particularly true in the context of subclinical sexual symptoms. For both mechanical and psychological reasons, men affected by subclinical ED (ie, partial erections or episodic difficulties getting or maintaining erections)[48] with a sexually healthy partner will fulfill NIH ED criteria[49] when coupled to a partner with initial or mild dyspareunia. This further highlights the importance of considering the couple as a whole.

EFFECTS OF SEXUAL DYSFUNCTION AND MIDLIFE CHANGES ON HOMOSEXUAL COUPLES

While we have focused on the concept of couplepause in heterosexual couples, it is important to develop a corresponding concept in homosexual couples who may jointly be facing either menopause or andropause symptoms together. Unfortunately, most data on how sexual dysfunction impacts sexual health and partner relationships has thus far been limited to heterosexual couples. However, an Internet-based survey of 7,001 U.S. men who were having sex with men (median age 38 years, range 18–85 years) found that 79% had experienced at least 1 symptom of sexual dysfunction in the past year.[50]

Some available data on how sexual dysfunctions affect gay couples come from studies of men with prostate cancer, the treatment of which is frequently associated with ED.[51] An online survey coupled with interviews of 124 gay and bisexual men who had prostate cancer and 21 of their male partners found that ED, if present, was considered a moderate or big problem with great emotional impact by 61% and a small or very small problem by 19%.[52] Specific themes that emerged included loss of self-worth and sense of masculinity; loss of gay identity or sense of

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belonging in the gay community; feelings of inferiority, incompetence, and isolation; and avoidance of intimacy (particularly with new partners). The absence of an erection was reported as a problem even for men engaging in receptive anal sex as it was sometimes perceived by the partner as lack of desire/arousal. Many of the long-term partners indicated support and understanding, and a desire for continued closeness in the relationship. A common complaint was that health care providers were uncomfortable discussing gay sex and generally had a poor understanding of the dynamics of gay and bisexual relationships.

Particularly lacking in the medical literature is information on how menopause affects the sexual relationships of lesbian couples. A survey of 8 lesbian and 31 heterosexual post-menopausal Irish women found that lesbian women (including those with, as well as without, biological offspring) were more likely to experience sadness and grief related to the ending of menstruation.[53] Unfortunately, this survey did not ask the participants about the effects of menopause on their sexual health or relationships.

IMPACT OF PHARMACOLOGIC TREATMENT ON THE COUPLE'S SEXUAL HEALTH

Recommended treatments for GSM include vaginal moisturizers and lubricants, vaginal estrogens, oral or transdermal hormone therapy (if other menopausal symptoms are present), and the new selective estrogen receptor modulator ospemifene (for dyspareunia due to VVA).[1,4,5,10,54] The U.S. Food and Drug Administration (FDA) recently approved intravaginal prasterone to treat moderate to severe dyspareunia in post-menopausal women.[55] Systemic tibolone can be used as an alternative to hormone therapy in post-menopausal women with sexual dysfunction, especially women with surgical menopause.[10] Regular sexual activity (alone or with a partner) can help maintain or restore vaginal health, and use of lubricated dilators of graduated size and pelvic floor physical therapy can help reverse vaginal constriction.[4] In the CLOSER study, among the 41% of women who had been prescribed vaginal estrogens, >60% reported less pain during sex and 38% reported an overall improvement in their sex life.[36]

Flibanserin is the first treatment approved in the United States for acquired, generalized HSDD in pre-menopausal women that causes marked distress or interpersonal difficulty.[56] It is currently indicated only for pre-menopausal women, and only if low sexual desire is not due to comorbid physical or psychiatric condition, relationship problems, or effects of medications or drugs.[56] Studies in pre-menopausal women showed that flibanserin significantly increased the number of satisfying sexual events (intercourse, oral sex, masturbation, or genital stimulation by partner), improved FSFI desire domain and overall scores, and reduced Female Sexual Distress Scale-Revised (FSDS-R) scores, but did not improve desire based on daily eDiary ratings.[57–59] Although it does not currently have an approved indication in post-menopausal women, a recent clinical trial in this population showed similar benefits that included a mean increase of 0.4 in satisfying sexual events/mo relative to placebo, adjusted mean increase in FSFI desire domain score by 0.3 and total score by 1.5 relative to placebo, and a reduction in FSDS-R total score by 2.0 relative to placebo.[60] A second study in post-menopausal women was terminated early, but results at week 16 showed improvements in FSFI desire and total score and FSDS-R total score, but not number of sexually satisfying events.[61] Flibanserin should not be combined with alcohol because there is an increased risk of severe hypotension and syncope, and is contraindicated for use with strong or moderate cytochrome P450 3A4 inhibitors.[56] Common side effects occurring in >10% of users include dizziness, somnolence, and nausea.[56] Flibanserin is currently not available outside of the United States, and its uptake within the United States has been limited. Approval within the United States occurred amid considerable controversy relating to diagnosis of HSDD, the choice of outcome measures of desire, the inclusion of satisfying sexual events as an outcome, and a mismatch in FDA requirements for treatments of male and female sexual dysfunction.[62] In addition, the National Women's Health Network, a patient advocacy group, has raised concerns about its efficacy, safety, potential for interactions with other drugs (including contraceptives), and its price.[63]

Studies on the impact of GSM treatments on the male partner's sexual function and satisfaction are largely lacking, but the couplepause concept may help promote them. In the CLOSER survey, men did report that their partner's use of vaginal estrogen improved their overall sex life, increased the extent to which they looked forward to having sex, and made them feel like they are more attractive to their female partners.[36] While treating the female partner's symptoms may have beneficial effects for the male partner in some cases, it should be noted that successfully addressing sexual symptoms of menopause in a couple where the male is affected by untreated HSDD and/or ED likely would be, from the couple's perspective, quite unhelpful.

The International Society for Sexual Medicine recommends testosterone replacement therapy for men if total testosterone is <8 nmol/L or if total testosterone is <12 nmol/L and the patient is symptomatic, as long as maintenance of fertility is not desired.[9] Assay precision should be considered in evaluating testosterone results: across 16 Italian laboratories, the coefficient of variation for testosterone measurements was 9.6–14.5%.[64] Testosterone replacement therapy can restore lean body mass, physical strength, erectile function, and libido, and improve mood, QoL, and (over the long term) bone mineral density.[8] It may also improve short-term endothelial function including arterial stiffness and vasodilatory response.[65] Testosterone is available in intramuscular, subdermal, transdermal, oral, and buccal formulations.[8] If no benefits are observed after a few months, treatment should be discontinued and other etiologies for the patient's symptoms should be sought.[7] Clinical experience suggests that increasing libido in the male partner without addressing the female partner's symptoms potentially affects the stability of the couple's relationship.

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Table 2. Example questions for addressing the sexual health of the couple[80,81]

• What does the status quo look like? What are the possible advantages and disadvantages to this situation?
• Have you spoken with your partner about your problem? How does your partner feel about this?
• What concerns did your partner express about either the problem or treatment?
• What, if any, concerns does your partner have about his/her own sexual function?
• How would you feel about bringing your partner in, so we can discuss the situation together?
• What changes are desired by each member of the couple? What would each person like to have stay the same?
• What changes can each individual make himself/herself?
• What must be accepted?
• Is there anything else I should know to help me understand your situation?

PDE5 inhibitors are effective in improving sexual function in men with ED,[66] and work as well in men older than 50 years as in younger men,[10] but do not address other symptoms of androgen deficiency.[13] Men with ED and their pre- and post-menopausal partners have reported improvements in erectile function, sexual satisfaction, and/or sexual QoL resulting from use of PDE5 inhibitors, including avanafil,[67] sildenafil,[68–71] vardenafil,[72–74] and tadalafil (as needed[75] or once daily[76–79]). Degree of improvement in erection hardness during PDE5 inhibitor therapy may correlate with improvement in men's self-esteem.[34,79] In a pilot study of 44 couples, the addition of sexual counseling to sildenafil resulted in improvements over sildenafil alone including better lubrication for women and more positive thinking about sex among men.[68] Women in that study were, on average, 50 years old, so many were pre-menopausal. In the FEMALES study, women whose partners were using PDE5 inhibitors reported greater desire and arousal and achieved orgasm more easily, but also were more likely to report pain with intercourse compared with women whose partners were not using PDE5 inhibitors.[37] Again, it can be inferred that treating ED without treating female HSDD and/or poor lubrication and consequent VVA and dyspareunia may make her symptoms worse instead of ameliorating the couplepause.

TAKING A COUPLE-ORIENTED APPROACH

The first steps to a couple-oriented approach are to talk about sexual health with the patient and then the couple. Patients are sometimes reticent to open such discussions, so clinicians should initiate the dialogue with simple open-ended questions (Table 2).[3] Sexual history taking should include level of sexual activity, and the effect of current symptoms on the patient's sex life and partner relationships.[4] Psychometric tools can help facilitate this assessment. It should be noted that patient's second-hand reports of their partner's level of sexual satisfaction may not be accurate; a survey of 142 Chilean couples found that men tended to overestimate their female partners' satisfaction, whereas women tended to underestimate their male partner's satisfaction.[82] This finding should be considered when contemplating the specific weight of the clinical symptoms of couplepause.

If sexual health concerns are present, we recommend scheduling an appointment with both members of a stable couple, whenever possible. It is important to note that not all patients or their partners will be interested in joint counseling, and protection of patient privacy will need to be considered as well, including his/her medical and sexual history, physical examination and laboratory findings, and pharmacologic interventions. Partner visits should be scheduled and health information shared only by patient choice, with care taken to avoid medical coercion.

During visits with both members of the couple, clinicians should explain the etiology of VVA, ED, ejaculatory dysfunction, or HSDD as medical conditions that do not necessarily reflect on the patient's emotional or sexual feelings toward the partner. Clinicians should attempt to elicit information about predisposing, precipitating, maintaining, or contextual factors that may be contributing to sexual dysfunctions (Table 3), as well as the level of personal distress and interpersonal problems resulting from the sexual dysfunction.[80,83,84] Collaboration among the patient, partner, and physician is key to this approach (Figure 2).[85]

The clinician should keep in mind that relationship issues, poor communication, family conflicts, everyday stressors, extramarital affairs, and lack of privacy can affect a couple's sexual interest,[86] and are not likely to be corrected by pharmacologic treatment.[70,87,88] Female partners may have anxiety about resuming sexual activity once PDE5 inhibitor therapy is initiated, especially if they have adapted to a long period of abstinence or have low levels of desire themselves.[81,89] Relationship or family conflicts can contribute to ED severity and penile blood flow as measured by Doppler ultrasound.[86] Concomitant illnesses and their medications can also potentially impact sexual function and satisfaction with sex.[90–92] Thus, sexual, medical, and psychosocial factors should be addressed in the management plan,[87] and the presence and quality of love and caring in the relationship should be considered.[83] Unfortunately, current research on psychotherapy for sexual dysfunction is limited by poor methodology compared with pivotal pharmacotherapy trials required for registration. Standards have been outlined for design of clinical trials for drugs in development for the treatment of sexual dysfunction,[93] and for use of patient-reported outcome measures.[94] Such standards could be applied, with some modifications, to studies of non-pharmacologic interventions.[93] However, this often does not occur, and studies of psychosocial interventions for sexual dysfunction vary widely in the quality of their design and reporting[95,96]; rarely use a randomized, double-blind, placebo-controlled design[83]; and are often subject to selection/recruitment bias.[97] Short trial duration often limits ability to assess the durability of response to psychosocial interventions.[95,96] Furthermore, trials of non-pharmacologic

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Table 3. Examples of predisposing, precipitating, maintaining, and contextual factors for sexual dysfunction*[80,83,84]

	Predisposing factors	Precipitating factors	Maintaining factors	Contextual factors
Biomedical factors	Congenital illness	Disabling accident or mutilating surgery	Psychiatric disorders and their treatments	
	Anatomical deformity	Onset of physical health problems and related treatments (eg, breast cancer, benign prostatic hyperplasia or prostate cancer, hypertension, diabetes, obesity, cardiovascular disease, musculoskeletal symptoms)	Ongoing comorbid health problems and their treatments	
	Climacteric symptoms		Partner's health issues	
	Weight gain			
	Alcohol abuse, smoking			
Intra- or inter-personal factors	Prior problematic relationship	Humiliation from one's partner	Relationship conflict or loss of sexual chemistry	Environmental constraints
	Neglectful, critical, or sexually restrictive upbringing	Partner infidelity	Performance anxiety or fear of intimacy	Anger/resentment toward a partner
	History of sexual or physical violence	Repetitive, traumatic or unsatisfactory sexual experiences	Guilt	Life stresses (eg, occupational, financial, or parenting related)
	Negative expectations	Conflictual separation/ divorce	Inadequate sexual information or stimulation, restricted foreplay	Pre-existing unresolved chronic conflicts
	Anxious-dependent personality		Impaired self-image or self-esteem	Habituation and routine
			Poor communication	Sexual boredom in the context of long-term monogamy
			Lack of privacy	
			Partner's sexual disinterest	

*There is often overlap or at least a lack of clear distinction between these 4 categories.

therapies often fail to adjust for multiplicity and missing data.[98] Clinicians should provide couples with advice for rebuilding their sex life and relationship. This may include changes in sexual habits (eg, reintroducing sex slowly with a lot of foreplay, spending more quality time together, adding novelty to the sexual repertoire, and improving body image).[10,89] Couples should be encouraged to foster intimacy and eroticism, and introduced to the "good-enough" sex model, which consists of sharing pleasure; accepting variable, flexible sexual scenarios and sexual function; and engaging in asynchronous sexual experiences.[99,100] Moderate, stepwise objectives should be encouraged over all-or-nothing thinking,[80] and realistic expectations should be established.

Follow-up should assess the effectiveness and tolerability of treatment and the couple's satisfaction with the results, address any new or ongoing concerns, and include medical and psychosocial reassessment.[81]

In recent surveys, only about one-third of men who had discussed ED and about half of women who had discussed VVA with their physicians were using pharmacologic treatment for these conditions.[31,101] Physicians who do not feel qualified to address sexual health needs or who are unable to do so because of religious/cultural constraints have a responsibility to refer affected couples to another provider who can provide appropriate, high-quality care.[81] Referrals to specialists or therapists should be considered for patients with relationship issues or histories of sexual or partner violence, medical/psychiatric problems outside the physician's area of expertise, lifelong ED, lack of response to PDE5 inhibitors,

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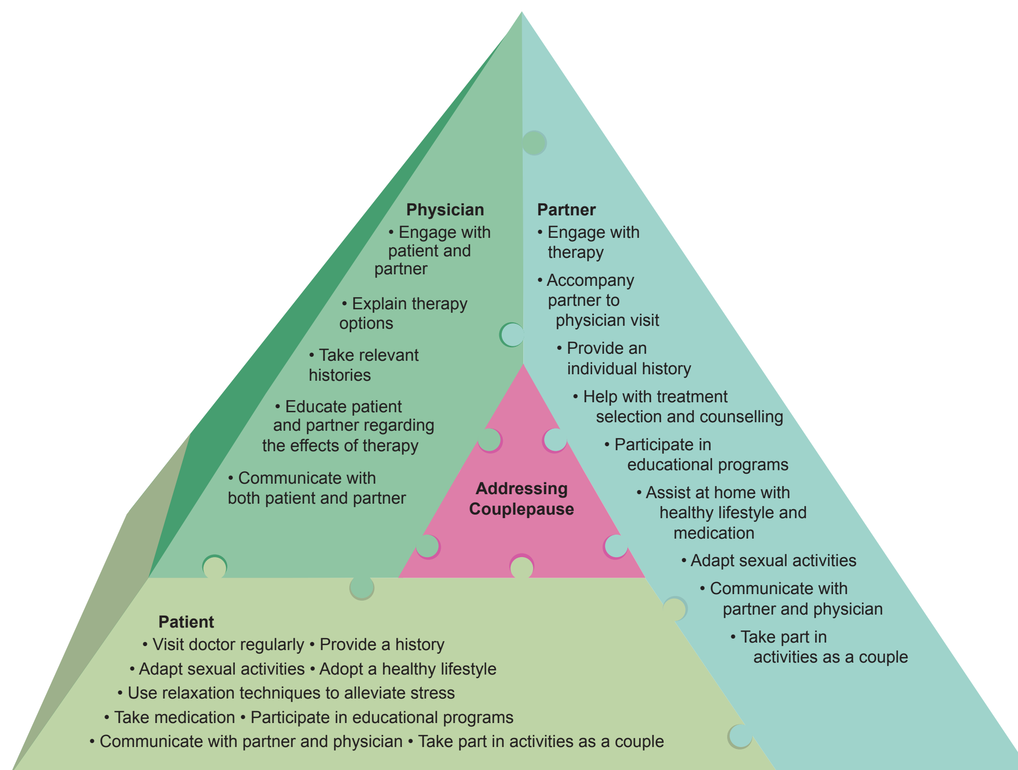

Figure 2. The sexual-partner-engaged approach for the treatment and rehabilitation of couples in couplepause. Adapted.[85] Collaborative efforts are required among the physician, the patient, and the patient's partner, each having different roles. Interaction and communication between the partner and patient should start as soon as there is a change in sexual behavior. The partner should not only encourage the patient with sexual dysfunction to see a physician and accompany him/her to the appointment, but should also consult with the physician regarding health issues that might affect their partner's sexual health. Open discussion and exchange of ideas on sex-related issues and therapy-related problems between the couple are equally as important as communication between the patient and physician. It is highly recommended that the couple take part in sex-related activities as well as social events to increase intimacy and relieve psychological distress. The ultimate goals of this approach are to achieve complete recovery from sexual dysfunction and re-establish a satisfactory sex life for the couple. The engagement of the 3 participants—the patient, the partner, and the physician—offers a comprehensive approach that provides an effective intervention and rehabilitation. Reprinted by permission of Macmillan Publishing LTD: Li H, Gao T, Wang R. The role of the sexual partner in managing erectile dysfunction. Nat Rev Urol 2016;13:168-177. Figure 2 is available in color online at www.smr.jsexmed.org.

persistent sexual dysfunction, or concerns about sexual orientation or gender identity.[81]

Finally, using the couplepause paradigm would minimize the risks of having the partner's sexual dysfunction sabotage treatment outcomes for the other partner,[102] and would create a new alliance between the doctor and the dyad. Studies are needed to ascertain if this couple-based approach will improve sexual health outcomes in aging couples as hypothesized.

CONCLUSION

Many older couples wish to maintain an active, healthy sex life. For some, the physical, hormonal, and sexual changes associated with menopause, andropause, and aging interfere with this goal. Health care providers should think in terms of couplepause, recognizing that changes that affect the sexual health of one member of a couple, in a time frame of life characterized by age-dependent sexual frailty, also affect the other, and both members of the couple may be facing changes concurrently and interdependently. Taking a couple-oriented approach to the evaluation and management of couplepause in the latter half of life can dramatically and simultaneously help both members of the couple to improve sexual satisfaction and intimacy.

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