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## Review Article

### Improving Care for One in Five Women: Evaluating and Managing Dyspareunia

Donna Scemons<sup>1\*</sup>, Trudy Egan<sup>2</sup>

<sup>1</sup>Assistant Professor, Patricia A. Chin School of Nursing California State University, Los Angeles, USA

<sup>2</sup>Triage RN, Kaiser Permanente Los Angeles, USA

**\*Corresponding author:** Donna Scemons, Assistant Professor, Patricia A. Chin School of Nursing California State University, Los Angeles, FNP at primary care clinic, Los Angeles, CA, USA. Tel: +16617029179; Email: dscemon@exchange.calstatela.edu

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#### Abstract

Although one in five women will suffer from dyspareunia during her lifetime, only 15% of providers inquire about it. Unless the healthcare provider asks direct questions about this symptom most women will not discuss it. The following article examines several differential diagnoses and suggests interventions for dyspareunia, which can often be provided in the primary care setting. Etiologies of dyspareunia are both pathophysiological and psychosocial with both medications and nonpharmacological interventions potential treatment options. Cognitive Behavioral Therapy (CBT) and sexual education are psychological management choices with positive outcomes. Nurse Practitioners (NPs) have the necessary skills and knowledge to focus on improving the health of female patients by facilitating a discussion of dyspareunia at each well woman encounter.

During their lifetime at least 1 in 5 women or 20% are affected by dyspareunia. Yet only 15% of healthcare providers investigate whether female patients experience painful intercourse. Etiologies are heterogeneous, from psychosocial issues such as anxiety which may reduce vaginal lubrication and triggering muscle spasms, to pathophysiological such as atopic skin changes, dysfunction of abdominal organs, and physiological changes related to pregnancy and menopause. Encouraging each woman to discuss dyspareunia during the well woman encounter provides patients reassurance that dyspareunia is a commonplace and reasonable subject of medical concern. Treatments are available, but should only be offered once communication is established between the patient and the provider.

#### Definition, Under diagnosis and Epidemiology

Various definitions of dyspareunia include “recurrent or persistent pain with sexual activity that causes marked distress or interpersonal conflict,” an “Insidious biopsychosocial pain cycle,” and “The pain-dominated perception of a mosaic of factors [which are] multifactorial, multisystemic, and complex [1-3]. Women are unlikely to discuss the issues of vaginal symptoms or sexual difficulties with their providers. However, these women are often open to exploring the diagnosis and treatment of dyspareunia if the provider introduces the discussion. When asked, only 10 - 15% of women disclosed that the provider inquired about vaginal symptoms. [4]. This provider avoidance may be due to a perceived difficulty in

the management of dyspareunia, despite the plethora of potential diagnoses that can be treated in the primary care or women’s health setting [5]. Numerous women seeking treatment express that 1) their concerns are invalidated, 2) they receive an unsatisfying response from the provider, or 3) the condition is dismissed as unimportant, all of which adds to the patient’s distress [5,6].

Diverse researchers cite varying statistics, but the overall trend is well-defined. During their lifetime dyspareunia affects somewhere between 1:5 and 1:3 women. During a 2-year study, 7.5% of British women suffered from dyspareunia and 10-28% experience dyspareunia in a lifetime [5]. American women have a lifetime prevalence of 33%, while 17-36% of new mother’s

experience dyspareunia six months postpartum [6,7] Approximately 15% of women are distressed by vulvodynia and an additional 15% of women experience provoked vulvodynia [3,8] Irrespective of the exact number, women complain more regularly of pain during intercourse than of any other sexual difficulty [9]. Over 96% of women suffering from dyspareunia are heterosexual, but women who sleep with women and men also experience sexual pain [10]. The women affected represent all national origins and socioeconomic classes and range in age from pre-menarche to older adult. With the exception of young children, all primary care settings are appropriate places to screen patients for dyspareunia.

## Causes of Dyspareunia

Dyspareunia may be divided into deep pain in the vagina, cervix, and abdomen, and entry pain occurring at the introitus [1,3]. Differential diagnoses for entry pain include skin conditions, vulvodynia, and vaginismus. Pain that may extend from entry to deep includes vaginal atrophy, vaginal dryness, and perivaginal infections such as urethritis, Sexually Transmitted Infections (STIs), and cystitis. Deep pain may be the result of endometriosis, pelvic inflammatory disease, uterine myomas, adnexal pathology, irritable bowel syndrome, Chron's disease, or sequelae of birth or surgery such as episiotomy or hysterectomy [1,11]. There is concern that classifying pain as deep or entry will reduce the likelihood of viewing the problem holistically [5]. The authors of this paper are concerned that, along with the risk of treating a body part rather than a person, dyspareunia may be diagnosed in a psychiatric rather than a somatic fashion despite the medical nature of most causes of the disorder.

## History and Physical Examination

The foundation for determining a differential diagnosis of dyspareunia is the history and physical [1]. NPs should routinely inquire about discomfort during intercourse as an element of each well woman visit. The patient may not have shared or may feel anxious sharing a vaginal symptom with a healthcare professional [6]. By repeating this inquiry over several visits the topic may become easier for the woman to discuss because it legitimizes dyspareunia as a medical problem that can be addressed with the assistance of a healthcare provider [11]. When obtaining a history, the NPs should,

1. Explain the connection between body and mind in the area of sexuality and pain.
2. Demonstrate a nonjudgmental attitude,
3. Progress from a detailed medical history to a focused history of the patient's sexual pain [8].
4. Consider age, post-menopausal women are more likely to have vulvovaginal atrophy; women of childbearing age may

have postpartum or post-surgical pain [1].

5. Complete pain assessment including the quality and location of the pain. Burning pain at the urethral meatus and bladder points to cystitis, while pelvic or adnexal pain often indicates endometriosis or cancer [8].
6. Complete a sexual assessment including desire, arousal, and orgasm. This discussion and the information obtained may improve understanding of the interaction between psychosocial and physiological functioning for the individual [8].

The physical exam begins with inspection, which may reveal rashes and lesions. A mirror allows the woman to visualize and better understand her anatomy while participating in the exam [1]. In order to minimize pain, invite the woman to open her own labia and retract the clitoral hood. A thorough musculoskeletal, integumentary, and nervous assessment of the lumbar and pelvic region is fundamental [6]. Use a cotton swab to pinpoint localized pain. Discharge may be noted, suggesting various infections including bacterial vaginosis and STIs [1]. Begin palpation with a single finger, exploring the structures of the introitus and then the vagina. Pelvic floor muscles should be evaluated for tenderness and strength [1,6]. Use the smallest available speculum to inspect the cervix and to assess the vagina for atrophy and dryness. The cervix may be painful even when normal in appearance if previous cervicitis or obstetric trauma is part of the history [1]. Swabs should be collected for STI testing as indicated [11]. Defer the bimanual exam to the end of the physical assessment as it may cause pain or muscle spasm [6]. Include a rectovaginal exam to assess for constipation and levator ani spasm [8].

## Assessment and Management of Psychosocial and Psychosexual Effects of Dyspareunia (Table 1)

Many forms of dyspareunia include a psychological component.

1. Depression, low self-esteem, and poor body image correlate with dyspareunia, as do certain cognitive styles: pain hypervigilance and catastrophizing [5].
2. Relationship distress contributes to and may adversely affect the patient's relationships [8].
3. A comorbid condition of sexual difficulties including inadequate sexual desire and arousal. Twice as many women with dyspareunia report disinterest in sexual intercourse compared to those without pain [5].
4. Difficulty communicating sexual preferences even with a supportive partner, leading to inadequate lubrication and pain [8].

Thus, sexual education forms an important part of the treatment plan for most forms of dyspareunia [3,8]. NPs should,

1. Inquire how the pain has affected the couple’s intimacy, what the couple has tried to resolve the problem, and what they believe will happen to their relationship if it is not resolved [11].
2. Focus the woman’s attention on the positive aspects of her sexual relationships.
3. Discuss and discourage self-blame and hopelessness with the patient.
4. Encourage masturbation and foreplay as a way to increase the woman’s psychological and physical comfort with intimate contact.
5. Consider suggesting the woman take a break from intercourse until her pain is better managed [8].

Educate women and their partners on the etiology, anatomy and pathophysiology of their vaginal pain condition. This may encourage sexual openness and may alleviate relationship distress during the diagnosis and treatment process, encouraging a return to health [3].

Diagnosis	Etiology	Symptoms	Treatment	Notes
<b>Postpartum Dyspareunia</b>	Vaginal tearing, stretching, episiotomy [1,12] 59-73% of women experience vaginal tear or cut during birth [12]. Predictors: In primiparas, twice as prevalent in breast feeders as bottle feeders [11] fatigue, stress, vacuum assisted delivery [12]	During reproductive ages Physical findings: dry mucosa, birth trauma evidence both at entry and deeply [1]	First line: Lubricants are the first-line treatment [4]. Transcutaneous Electronic Nerve Stimulation (TENS) effective while supine or seated, not while standing [13]. Dubious utility in the real world [14]. Time Surgical revision is a second line treatment option for poorly healed tears and episiotomies causing lasting pain [4].	Approximately 40 % of women experience dyspareunia during the first 3 months postpartum, dropping to 22 % after 6 months [1]. More than 30 % of women experiencing perineal pain after giving birth continue to complain of dyspareunia at six months [1].
<b>Skin Changes: Contact dermatitis</b>	Exposure to latex, the spermicide nonoxynol-9, or personal hygiene products. Fungal and bacterial dermatitides may also lead to dyspareunia [8].	Pruritus, rash, erythema [15] Physical findings: skin thickening, dampness in vulvar area, vulvar pain with speculum insertion [15]	Eliminate the irritant or treat the infection [10].	Common irritants: abnormal vaginal discharge, excessive hygiene, feminine hygiene products, feces, hair dryer, medications (alcohol based products, propylene glycol, spermicides), soaps/detergents, or sweat [16].
<b>Skin Changes: Vulvar lichenification,</b>	Painful and/or pruritic Inflammatory conditions of the vulva implicated in dyspareunia. All painful and/or pruritic [13] There are 3 forms Lichen Planus Lichen Sclerosis Lichen Simplex Chronicus	All painful and/or pruritic [13] Physical findings: squamous hyperplasia, intertrigo [16,15]	Refer to each etiology	
	<b>Lichen Planus, Vulvar Lichen Planus (LP)</b> An autoimmune problem which affects the vagina, the vulva, and may include the oral mucosa.	Symptoms of erosive LP are dysuria, dyspareunia, and pain, which may impact the patient’s ability to perform personal hygiene or limit sitting and ambulation [13,17].	First line: Topical steroid creams rectal steroid suppositories inserted vaginally Oral steroids may be indicated. Refractory cases may require	

Diagnosis	Etiology	Symptoms	Treatment	Notes
	<p>It is sometimes comorbid with other autoimmune issues. Three subtypes: erosive LP, hypertrophic LP, papulosquamous LP</p> <p>The most frequent variant erosive LP, appears as raw, lacy white erosions in the medial vulva and often the vagina [13,18]. It may lead to vaginal adhesions or even complete obstruction of the vaginal introitus [13,18]. LP most commonly affects women in their 50-70 [18].</p>	<p>Hypertrophic and papulosquamous LP more frequently causes pruritus [13,18]. Physical findings: All ages found at entry visible lesions, visible mucosal abnormality [1].</p>	<p>immunosuppressants including azathioprine, methotrexate, or mycophenolate mofetil [13,18]. Photodynamic therapy [13,18] Surgery to remove adhesions [13]. Biopsy to exclude squamous cell carcinoma, which occurs in 1-3% of LP lesions [13,18].</p>	
	<p><b>Lichen Sclerosus (LS)</b></p> <p>Familial or associated with other autoimmune disorders including thyroiditis [13,19]</p> <p>It is underdiagnosed [19]. Occurs mainly in the vulva and perineum, without affecting the vagina [13,19]. Affects other body areas in 6-20% of patients [13,19]. LS most frequently affects either pre-pubertal girls or post-menopausal women.</p>	<p>Squamous cell carcinoma and changes to the vulvar architecture may occur. Differentiate from LS [17]. Approximately 40% of adults with LS are asymptomatic leading to under-diagnosis [13]. Asymptomatic cases, compounded by a failure to carefully assess the perineum and vulva, may cause a delay in diagnosis [13,20]. Symptomatic patients experience pain, dyspareunia, burning, and vaginal and anal pruritus with frequent or dull, painful vulvar discomfort with remissions and relapses [19,20,16]. Physical findings: red patches, plaques [16] The skin texture is fragile, like thin paper [19,20]. The condition causes ivory or white, pale, shiny plaques and papules, which may be accompanied by fissures, hyperkeratosis, purpura, ulcerations, or erosions [13,20].</p>	<p>First line: Ultrapotent steroid ointment, the first-line treatment for vulvar LS, is effective in greater than 95% of cases, Topical testosterone is no more useful than Vaseline. Once controlled, patients should continue a low or moderate potency steroid for maintenance therapy [13]. Biopsy is recommended to definitively diagnose LS in adults [13,20].</p>	<p>Adolescents should be biopsied only if they are unresponsive to treatment. LS may lead to an elevated risk of genital cancer [19,20]. Biopsy nevi may to rule out melanoma. Despite the rarity of melanoma as a comorbidity with LS.</p>

Diagnosis	Etiology	Symptoms	Treatment	Notes
	<p><b>Lichen simplex chronicus (LSC)</b> is a form of chronic atopic dermatitis affecting the vulva. Frequent abrasion or chemical irritants [13]. LSC is the most common dermatosis of the vulva in older women [21].</p>	<p>Skin thickened by constant excoriation, increasing the risk of secondary infection [13]. Pruritus is severe and causes sleep disturbances [13]. Physical findings: Lichenoid plaques do not involve the vagina but appear on the perineum and the labia minora and majora [13,16,17,15].</p>	<p>Psychosocial support and patient education are critical to successful treatment [13]. Medical treatments include Topical” • high potency topical steroids, • lidocaine, • antihistamine ointments, Oral medications, • calcineurin inhibitors, • oral first-generation antihistamines to reduce nighttime scratching [13]. Differential diagnoses may include LP, contact dermatitis, or candidiasis. Due to the chronic nature of the condition, treatment must be ongoing.</p>	
<p><b>Vaginal Atrophy</b></p>	<p>Estrogen depletion causing vaginal atrophy affects 40-50% of post-menopausal women. Change in vaginal flora, a decline in the proportion of Lactobacillus and an increase in the proportion of Streptococcus and Prevotella species [22,23] may be noted. Another is the use of oral contraceptive pills by premenopausal women [1,10].</p>	<p>Complaints of • pain, • itching (puritis) • pain urinating (dysuria) Physical findings include • thinning and fragility of the vaginal mucosa and loss of vaginal rugae [10,22]. • vaginal dryness [8,22].</p>	<p>Topical estrogen creams Ospemifine 60 mg/d PO daily [23] • SERM (selective estrogen receptor modulator) estrogen agonist/antagonist. • lowers the vaginal pH [24]. • increases sexual comfort approximately 10% over [25]</p> <p>• Safety studies of ospemifine conducted over the course of a year showed no clinically significant changes in serum chemistries and no pathological changes in the breasts or endometrium as demonstrated by breast exam and endometrial biopsy [13,23].</p> <p>• Endometrial thickness, measured with vaginal ultrasound, did</p>	<p>While in the same class of medications as tamoxifen, ospemifene is useful in treating dyspareunia as it acts mainly as an estrogen agonist in the vaginal epithelium, increasing superficial cells and decreasing parabasal cells [25,24].</p> <p>Investigational</p> <p>• REJOICE study of TX-004HR, a vaginal 17β-estradiol softgel found that doses between 4 and 25 mcg vaginally were effective in reducing dyspareunia within 2 weeks [26].</p> <p>• Oral probiotics or a probiotic pessary [22].</p> <p>Further study is necessitated to determine if reversing alteration in</p>

Diagnosis	Etiology	Symptoms	Treatment	Notes
			<p>increase. adverse effect reported [25,24].</p> <ul style="list-style-type: none"> <li>The medication was well tolerated, with hot flashes being the most common adverse effect reported [24].</li> </ul>	<p>the vaginal fauna will provide relief from vaginal atrophy</p>
<b>Vaginal Dryness</b>	<p>May stem from</p> <ul style="list-style-type: none"> <li>psychological causes such as <ul style="list-style-type: none"> <li>disinterest in sexual intercourse,</li> <li>personal discomfort with sexual pleasure,</li> <li>history of sexual abuse [1,27].</li> </ul> </li> <li>physiological causes <ul style="list-style-type: none"> <li>hypothalamic-pituitary dysfunction,</li> <li>estrogen deficiency,</li> <li>menopause,</li> <li>atherosclerosis,</li> <li>diabetic neuropathy</li> </ul> </li> <li>Sequelae of cancer treatment may cause vaginal dryness, as may medications including oral contraceptives [1,2].</li> <li>Peri- and post-menopausal hormonal change is the most common cause.</li> </ul>	<p>As with most forms of dyspareunia, vaginal dryness may interfere with the women's intimate relationships, thereby reducing her quality of life [27].</p> <p>Physical findings: dry, thin, less elastic, possibly inflamed, fragile vaginal tissues, decreased lubrication and secretion [16,17].</p>	<p>First line: Vaginal lubricants once underlying disorders have been ruled out [1].</p> <p>Vaginal moisturizers, applied every 1-3 days rehydrate dry mucosa.</p> <p>In addition to the use of lubricants and moisturizers, oral ospemifene has been shown to decrease dyspareunia in women suffering from vaginal dryness [25].</p>	<p>More about lubricants:</p> <ul style="list-style-type: none"> <li>Lubricants provide short-term relief, but act quickly.</li> <li>Additives may irritate some patients.</li> <li>Most women fare better if the lubricant or moisturizer chosen has similar pH and osmolality to normal vaginal secretions [27].</li> </ul>
<b>Vaginismus</b>	<ul style="list-style-type: none"> <li>Vaginismus is the painful, involuntary pelvic floor contractions causing difficulty penetrating the vagina [1].</li> </ul> <p>Only applies if woman desires intercourse [3]. Affects 1-7% of women [28].</p> <p>Psychological: anxiety</p> <ul style="list-style-type: none"> <li>stress</li> </ul> <ul style="list-style-type: none"> <li>previous sexual experience [28,30].</li> </ul> <p>Physiological:</p> <ul style="list-style-type: none"> <li>adhesions from prior surgery vaginal trauma including postpartum sequelae [30].</li> </ul>	<p>Assessment: This is where the applicator and gentle exam is essential.</p> <p>Physical findings: involuntary, painful contractions of pelvic floor during pelvic exam [1]</p>	<p>Muscle relaxants, lubricants containing lidocaine, anxiolytics and antidepressants may be effective [28]</p> <p>Cognitive behavioral therapy 40% effective alone [29].</p> <p>A 5-week regimen using a combination of CBT, vaginal dilators, Kegel exercises, and intravaginal Botox injections, supplemented by office, telephone, and email follow up is 70% effective [31].</p> <p>In cases involving adhesions, lysis may be required before dilators can be used [8,10].</p>	

<p><b>Vulvodinia</b></p>	<p>Vulvodinia is an idiopathic chronic vulvar pain lasting more than 3 months. It is a diagnosis of exclusion [32,33].</p> <p>Vulvodinia is classified as unprovoked, provoked by touch, or mixed.</p> <p>It is categorized as</p> <ul style="list-style-type: none"> <li>• generalized vulvodinia,</li> <li>• vestibulodynia,</li> <li>• clitorodynia.</li> </ul> <p>Affects 7-8% of women [28].</p> <p>There is some debate as to whether vulvodinia is somatoform or neuropathic in nature. Vulvodinia and vestibulodynia may be viewed as neuropathic inflammatory issues.</p> <p>Biopsies show increased numbers of nerve endings near the Bartholin's gland [3]. Neuropathic changes may be sequela of</p> <ul style="list-style-type: none"> <li>• long term vaginal dryness</li> <li>• repeated infections [10].</li> </ul>	<ul style="list-style-type: none"> <li>• Cutting, stabbing or burning pain,             <ul style="list-style-type: none"> <li>• Irritation,</li> <li>• Pruritus,</li> </ul> </li> <li>• Rawness, or a stinging sensation [10].</li> <li>• Older women complain of unprovoked, constant pain, while younger women complain of dyspareunia with intercourse [32].</li> </ul> <p>Physical findings: pain may be provoked during the pelvic exam. Evidence of vaginal dryness of chronic nature [10].</p>	<p>Validate the woman's pain and reinforce that this is a real medical condition.</p> <p>Discontinue:</p> <ul style="list-style-type: none"> <li>• ineffective medications and use of harsh soaps;</li> <li>• Replace with daily application of a moisturizing barrier cream [32].</li> </ul> <p>Develop, with the client, a treatment plan, to manage flare-ups [6].</p> <p>Medications:</p> <ul style="list-style-type: none"> <li>• Lidocaine gel may reduce the pain of intercourse.</li> <li>• Topical estrogens during perimenopause and menopause may provide some relief [32].             <ul style="list-style-type: none"> <li>• Botox,</li> </ul> </li> <li>• Pudendal nerve blocks,             <ul style="list-style-type: none"> <li>• Anticonvulsants,</li> </ul> </li> <li>• Tricyclic antidepressants [33].</li> </ul> <p>Physiological:</p> <ul style="list-style-type: none"> <li>• Physiotherapy of the pelvic floor muscles, including             <ul style="list-style-type: none"> <li>○ trigger point</li> <li>○ myofascial release therapy</li> <li>○ soft tissue mobilization,</li> <li>○ muscle exercise [28]                 <ul style="list-style-type: none"> <li>• Biofeedback</li> </ul> </li> </ul> </li> <li>• Transcutaneous Electrical Nerve Stimulation (TENS) [33].</li> </ul> <p>Psychological:</p> <p>A team approach including sexual and cognitive behavioral therapy is recommended to ameliorate physical and psychosocial effects. Sexual education, couples counseling, yoga, meditation, and cognitive behavioral therapy are helpful in managing pain-related psychosocial distress [6,20,21]. CBT appears to give lasting results - improvement continuing after formal therapy has been completed [29].</p> <p>Vestibulectomy is a treatment of last resort for women with unmanageable pain gravely compromising quality of life [33].</p>	<p>The effects on quality of life: Pain may impede to wearing underwear or clothing, forcing some women to become homebound [32].</p> <p>Women may be distressed by the inability to identify a specific cause of the pain [3].</p>
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**Table 1:** Assessment and Management of Psychosocial and Psychosexual Effects of Dyspareunia.

## Conclusion

Dyspareunia is a significant cause of both physical and psychosocial distress, affecting 20-33% of women during their lifetime. The condition is underreported because women are hesitant to raise the topic during routine visits. Practitioners may be unaware that a significant proportion of their patients suffer from dyspareunia, and they may be uninformed as to the differential diagnoses and treatment options available. NPs and physicians should ask women about sexual dysfunction including dyspareunia at every well woman visit. With such inquiry, the NP legitimizes dyspareunia as a medical problem. Dyspareunia can only be successfully evaluated and treated with the consent and active participation of the woman, who is more likely to be comfortable discussing the problem if encouraged by the practitioner in a routine and sensitive manner. Dyspareunia may be a result of normal changes in the body, of pathophysiology, of psychiatric origin, or a result of iatrogenic causes ranging from medication to sequelae of surgery and radiation. The pain can be an impediment to activities of daily living, including the wearing of clothing. Interference with physical intimacy creates a barrier between some women and their partners. The inability to engage in sexual intercourse diminishes some sufferer's sense of femininity and feelings of self-worth and social value. While the etiology of dyspareunia is variable, it can be managed medically and with cognitive behavioral therapy.

NPs have an obligation to assist the substantial proportion of women suffering from dyspareunia. Dyspareunia is most successfully assessed by acknowledging the reality of the pain, establishing a relationship of trust, and involving the woman in her own care. Once this partnership has been established, the NP can arrive at a correct diagnosis and collaborate with the woman to choose the best treatment options for her individual situation.

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