REVIEW PAPER

Psychological Treatment for Vaginal Pain: Does Etiology Matter? A Systematic Review and Meta-Analysis

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ABSTRACT

Introduction. Classification of vaginal pain within medical or psychiatric diagnostic systems draws mainly on the presumed presence or absence (respectively) of underlying medical etiology. A focus on the experience of pain, rather than etiology, emphasizes common ground in the aims of treatment to improve pain and sexual, emotional, and cognitive experience. Thus, exploring how vaginal pain conditions with varying etiology respond to psychological treatment could cast light on the extent to which they are the same or distinct.
Aim. To examine the combined and relative efficacy of psychological treatments for vaginal pain conditions.
Methods. A systematic search of EMBASE, MEDLINE, PsycINFO, and CINAHL was undertaken. Eleven randomized controlled trials were entered into a meta-analysis, and standardized mean differences and odds ratios were calculated. Effect sizes for individual psychological trial arms were also calculated.
Main Outcome Measures. Main outcome measures were pain and sexual function.
Results. Equivalent effects were found for psychological and medical treatments. Effect sizes for psychological treatment arms were comparable across vaginal pain conditions.
Conclusions. Effectiveness was equivalent regardless of presumed medical or psychiatric etiology, indicating that presumed etiology may not be helpful in selecting treatment. Research recommendations and clinical implications are discussed. **Flanagan E, Herron KA, O'Driscoll C, and Williams AC de C. Psychological treatment for vaginal pain: Does etiology matter? A systematic review and meta-analysis. J Sex Med 2015;12:3–16.**

Key Words. Vaginismus; Dyspareunia; Vestibulodynia; Vulvodynia; Sexual Dysfunction; Psychotherapy

Introduction

This review examines three disorders under the collective heading of vaginal pain: vulvodynia, vaginismus, and dyspareunia. While the basis for distinction has been challenged because of shared psychological and physiological symptomatology [1,2], etiological factors are still used to differentiate diagnoses. This review attempts to combine data from treatment trials for vaginal pain and assess whether outcomes of psychological treatment differ according to etiological distinctions.

Vulvodynia—chronic pain in the vulval region—can be generalized or localized, provoked by contact or unprovoked. Combinations of these subtypes exist, and multiple terminologies are current. For instance, vestibulodynia is a term used to describe vulvodynia localized to the vestibule. It is unclear exactly what processes underlie vulvodynia, although physiological etiology is to a degree assumed [3,4]. Several theories have been proposed, including changes in sensitivity of the peripheral nervous system [5,6]. Diagnosis is made on the basis of pain on contact, tenderness to local pressure, and vestibular erythema. For the purpose

of this review, the term "medically defined" refers to disorders that are presumed to be medical in their etiology. While no particular psychological characteristics are required for a diagnosis, unsurprisingly, vaginal pain impacts various aspects of sexual desire and performance [7,8].

Dyspareunia (painful intercourse) is often diagnosed in conjunction with provoked vulvodynia and sometimes these terms are used interchangeably [2]. However, dyspareunia is also defined in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM). In the Fourth Edition, Text Revision (DSM-IV-TR [9]; replaced in 2013 by DSM-5, but current for this review), sexual dysfunction, defined as interference with sexual responsiveness or pleasure that causes marked distress or interpersonal difficulty, included two painful conditions: (i) dyspareunia, defined after exclusion of other medical causes as "recurrent or persistent genital pain associated with sexual intercourse"; and (ii) vaginismus, defined as "recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with sexual intercourse". The distinguishing criterion between dyspareunia and vaginismus was vaginal muscle spasm, the certainty of which has been disputed [1,10,11]. For the purpose of this review, the term "psychiatrically defined" refers to vaginismus and dyspareunia where they are defined as primarily psychiatric in their etiology.

In the recently introduced DSM-5 classification, vaginismus and dyspareunia are classified together under the broader label of "genito-pelvic pain/penetration disorder" (GPPPD) [12]. Four criteria are assessed separately: (i) persistent or recurrent difficulties in vaginal penetration during intercourse; (ii) marked vulvovaginal or pelvic pain during intercourse or penetration attempts; (iii) marked fear of or anxiety about vulvovaginal or pelvic pain in anticipation of, during, or as a result of penetration; and (iv) marked tensing or tightening of the pelvic floor muscles during attempted penetration. Any one criterion is sufficient for diagnosis: for example, some women experience pain but still manage penetration, whereas others cannot manage penetration because of actual or anticipated pain. These four domains do not rely so heavily on the assessment of etiological factors (such as a spasm); instead the focus is on symptomatology and impact on functioning. Thus, provoked vulvodynia effectively falls under GPPPD by virtue of involving pain on touch, likely to be aggravated during sexual penetration, in the absence of a known medical cause, with the risk of leading to a marked fear of sexual activity [13].

Studies that have examined differences between vaginismus and dyspareunia have shown inconclusive results. A review of electromyogram (EMG) studies concluded that muscular responses in vaginismus could not be accurately differentiated from those in dyspareunia and vulvodynia [1]. A small, possibly underpowered study found no difference in ease of penetration (by a finger), muscle tension, redness, or pain during intercourse [14]. Another study reported greater muscle tension and more frequent vaginal spasms on gynecological examination in vaginismus than in dyspareunia (from vestibulodynia), but still in less than one-third of the women with vaginismus [15]. Interestingly, fear and avoidance behaviors were frequently reported, which are characteristic of chronic pain [16]. Seventy-three percent of the vaginismus group refused EMG sessions (none in dyspareunia and control groups) and were found more difficult to examine by gynecologists. This corresponds with psychological correlates of vaginismus, such as increased catastrophic thinking about pain and feelings of disgust [17,18]. Catastrophic thinking, not reflected in the DSM definition, is consistent with chronic pain presentations.

Chronic pain is increasingly characterized as a disorder with common biological and psychological features regardless of pain location [6]. Melzack and Wall's [19] pioneering pain-gate model, now universally accepted, was the first to integrate neuronal response with noxious sensory input and "descending influences" representing cognitive and emotional processes (e.g., attention, mood, and memory). Changes in the nervous system, both centrally and peripherally, include the amplification or suppression of neuronal response and a failure to activate descending inhibition. Known as sensitization, these changes have been identified in vulvodynia, and rather less reliably in vaginismus [20–22]. Basson's [23] model of provoked vestibulodynia proposed that pain generates sexual dysfunction even when a physiological cause such as central sensitization can be identified and that premorbid psychological factors including anxiety, depression, harm-avoidance, and vigilance to somatic experience exacerbate pain and adversely affect sexual function. The problem is then maintained by acquired risk factors, including beliefs of sexual inadequacy and diminished sexual motivation. Similar top-down influences, such as heightened harm-avoidance, have been found in women with vaginismus, and it could be conceived that