

PAIN

## Psychobiological Correlates of Vaginismus: An Exploratory Analysis



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### ABSTRACT

**Background:** Evidence concerning the determinants of vaginismus (V), in particular medical conditions, is inconclusive.

**Aim:** To investigate, in a cohort of subjects consulting for female sexual dysfunction, whether there is a difference in medical and psychosocial parameters between women with V and women with other sexual complaints.

**Methods:** A series of 255 women attending our clinic for female sexual dysfunction was consecutively recruited. V was diagnosed according to *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* criteria. Lifelong and acquired V cases were included.

**Outcomes:** Patients underwent a structured interview and physical, gynecologic, laboratory, and clitoral ultrasound examinations; they completed the Female Sexual Function Index (FSFI), the Middlesex Hospital Questionnaire, the Female Sexual Distress Scale—Revised (FSDS), and the Body Uneasiness Test.

**Results:** V was diagnosed in 20 patients (7.8%). Women with V were significantly younger than the rest of the sample ( $P < .05$ ). No differences were found for traditional risk factors such as a history of sexual abuse, relational parameters, or gynecologic diseases or for newly investigated parameters (ie, neurologic, hormonal, and metabolic alterations). Women with V showed significantly higher histrionic-hysterical symptoms and traits (as detected by MHQ-H score;  $P < .05$ ) compared with subjects with other sexual complaints. When the scores of all MHQ subscales were simultaneously introduced in a logistic model, the association between V and MHQ-H score was confirmed ( $P = .013$ ). Women with V also showed higher FSFI pain and FSDS total scores, even after adjusting for age ( $P < .05$ ). In an age-adjusted model, FSDS total score increased as a function of the years of duration of V ( $P = .032$ ) but not as a function of its severity. All observations were confirmed in a case-control study (ratio = 1:3).

**Clinical Implications:** Our data demonstrate that some novel contributors of V should be investigated, namely histrionic-hysterical traits. This psychological comorbidity could offer valuable insights for intervention and managing complications.

**Strengths and Limitations:** This is the first study to assess the role of many metabolic and hormonal parameters as potential determinants of V. The main limitation is its exploratory and cross-sectional nature; our data need to be confirmed in larger, more systematic analyses.

**Conclusion:** V was associated with histrionic-hysterical traits, FSFI pain domain, and sex-related distress. A history of abuse, relational parameters, gynecologic diseases, and hormonal and metabolic alterations do not seem to play a role in the development of V. **Maseroli E, Scavello I, Cipriani S, et al. Psychobiological Correlates of Vaginismus: An Exploratory Analysis. J Sex Med 2017;14:1392–1402.**

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**Key Words:** Vaginismus; Genito-Pelvic Pain/Penetration Disorder; Etiology; Hormones; Organic Causes; Histrionic Personality Disorder

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## INTRODUCTION

Vaginismus (V) is a condition that greatly impairs the quality of life of women and their partners,<sup>1</sup> and its prevalence in sexual clinical settings ranges from 5% to 17%.<sup>2</sup> In the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV), V was defined as “a recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with vaginal penetration, causing personal distress.”<sup>3</sup> The 5th edition of the DSM (DSM-5) recently introduced a substantial revision of the definition, classifying V with dyspareunia under the broader label of “genito-pelvic pain/penetration disorder,”<sup>4</sup> and it indicates that if a medical condition is the cause of the sexual problem, then the diagnosis of sexual dysfunction would not be assigned. However, this new classification has raised several concerns. Indeed, in the proposed diagnostic guidelines for the *International Classification of Diseases, Eleventh Revision* (ICD-11), expected to be approved by the World Health Organization in 2018, V (referred to as “sexual pain-penetration disorder”) is a separate diagnosis from dyspareunia and vulvodynia, which remain in the genitourinary chapter.<sup>5</sup> The most innovative feature of the ICD-11 classification compared with the DSM-5 is its attempt to integrate “organic” and “non-organic” dysfunctions, thus recognizing the important role of medical conditions as potential etiologic or contributory factors in sexual disorders, including V.<sup>5</sup>

It has been traditionally suggested that, in women with V, adverse physical and/or psychological conditions act through a vicious cycle of fear and avoidance, in which attempted penetration causes distress and muscle tension (as part of a protective reaction), producing further avoidance and thus leading to an unrelenting fear of penile penetration.<sup>6,7</sup> Among psychological comorbidities, patients with V show increased anxiety and self-focused attention<sup>8</sup> and alexithymia, defined as a poor capacity for emotional processing.<sup>9</sup> A persistent negative attitude toward sexuality, passive aggressiveness, and a history of childhood sexual abuse also have been traditionally associated with V.<sup>10–12</sup> For organic risk factors, little information is currently available and it is supported by inconclusive evidence.<sup>1,13</sup> Only a few dated case series have identified some potential physical determinants for V, namely congenital (ie, hymeneal) abnormalities, infections and/or irritations, genitourinary syndrome of menopause, trauma associated with genital surgery or radiotherapy, endometriosis, and vaginal lesions and tumors.<sup>14–19</sup> Given these facts, it is clear that studies are needed to explore and further understand the medical problems that could be associated with V.

The aim of this exploratory study was to investigate, in a cohort of subjects consulting for female sexual dysfunction (FSD), whether there is a difference in organic and psychosocial parameters between women with V and women with other sexual complaints. Therefore, we explored the following medical conditions as potential determinants of V:

- Neurologic diseases associated with neuropathic pain and dysesthesia<sup>20</sup>
- Diabetes mellitus complicated by neuropathic pain, dysesthesia, and inadequate arousal or lubrication<sup>21</sup>
- Metabolic syndrome, obesity, hypertension, and dyslipidemia, which have been associated with inadequate arousal or lubrication<sup>21,22</sup>
- Menopause related not only to hormonal changes (hypoestrogenic states)<sup>23</sup> but also to metabolic alterations
- Dysthyroidism (hyper- and hypothyroidism), in light of the role thyroid hormones play in regulating the contraction-relaxation cycle in the skeletal muscle<sup>24</sup>; in particular, experimental hypothyroidism has been demonstrated to modify the morphometry of pelvic (pubococcygeus) and perineal (bulbospongiosus) muscles<sup>25</sup>
- Dysregulation of morning cortisol, a hormonal reflection of chronic stress, linked to chronic pelvic pain<sup>26,27</sup>
- Resistance of the clitoral arteries, which has been positively associated with metabolic syndrome and obesity and negatively associated with the arousal response<sup>22</sup>
- Androgen levels, for their role in FSD and their anabolic effect on pelvic floor musculature<sup>28–30</sup>; promising data are available on the efficacy of local androgen treatment in conditions related to sexual pain<sup>31</sup>

## METHODS

The present study is a retrospective analysis of a consecutive series of 255 women attending the Sexual Medicine Outpatient Clinic for FSD at the University of Florence, (Florence, Italy). For all these women, clinical, biological, psychological, sexual, and clitoral Doppler ultrasound parameters had been previously collected according to a standardized protocol. All procedures were in accordance with ethical standards and approved by the institutional research committee (protocol 37.589/SPE.13.034, Careggi Hospital, Florence, Italy; NCT02372643). Diagnoses of V and other FSDs were made according to the text revision of the DSM-IV (DSM-IV-TR),<sup>3</sup> which was available at the time of the study. Briefly, according to the DSM-IV-TR,<sup>3</sup> the diagnostic criteria for V were (i) recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with sexual intercourse; (ii) disturbance causes marked distress or interpersonal difficulty; and (iii) the disturbance is not better accounted for by another Axis I disorder (eg, somatization disorder) and is not due exclusively to the direct physiologic effects of a general medical condition. Lifelong and acquired cases of V were considered. The clinical assessment was performed for each patient with FSD using a multidisciplinary approach involving a gynecologist, a mental health professional (psychiatrist and/or psychologist), and an endocrinologist, all experienced in FSD management; more specifically, the gynecologist was responsible for the final diagnosis of V.

Before any other diagnostic procedure, a physical examination was performed with measurements taken of body weight, height, body mass index, waist circumference, and systolic and diastolic blood pressure. A standardized gynecologic examination was

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