

## **Etiological Correlates of Vaginismus: Sexual and Physical Abuse, Sexual Knowledge, Sexual Self-Schema, and Relationship Adjustment**

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*This study investigated the role of sexual and physical abuse, sexual self-schema, sexual functioning, sexual knowledge, relationship adjustment, and psychological distress in 87 women matched on age, relationship status, and parity and assigned to 3 groups—vaginismus, dyspareunia/vulvar vestibulitis syndrome (VVS), and no pain. More women with vaginismus reported a history of childhood sexual interference, and women in both the vaginismus and VVS groups reported lower levels of sexual functioning and a less positive sexual self-schema. Lack of support for traditionally held hypotheses concerning etiological correlates of vaginismus and the relationship between vaginismus and dyspareunia are discussed.*

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There has been a long history of speculation but relatively few empirical studies concerning the etiology of vaginismus. Among the etiological factors that have been implicated are sexual and physical abuse (see, e.g., Biswas & Ratnam, 1995; Dupree Jones, Lehr, & Hewell, 1997), negative attitudes toward sexuality (see, e.g., Shortle & Jewelewicz, 1986; Ward & Ogden, 1994), lack of sexual knowledge/sex education (see, e.g., Ellison, 1968; Silverstein, 1989), and relationship difficulties (see, e.g., Grafeille, 1986; Weiner, 1973). Critical reviews of this literature have concluded that the available studies are so methodologically flawed that adequate conclusions concerning etiology cannot be drawn (see, e.g., Reissing, Binik, & Khalifé, 1999; van de Wiel, Jaspers, Weijmar Schultz, & Gal, 1990). For example, few of the available etiological studies use formal statistical analysis, control groups, or standardized measurement instruments. In addition, Reissing et al. (1999) pointed out that only 3 studies (Blazer, 1964; van Lankveld, Brewaeyts, Ter Kuile, & Weijenborg, 1995; Ward & Ogden, 1994) were specifically designed to investigate etiology. Despite this, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) continues to refer to sexual trauma, negative attitudes toward sex, and youth (presumably sexual inexperience) as etiological, or associated, features of vaginismus (American Psychiatric Association, 1994, p. 514).

The purpose of this study was to test the above etiological hypotheses using matched controls and standardized psychometric interview and questionnaire instruments. In addition, given that a DSM diagnosis requires the presence of significant distress, this study also evaluated the presence of psychological distress in women with vaginismus. Finally, this study also evaluated overall sexual functioning, which is generally assumed to remain unaffected except for the vaginal penetration difficulties (e.g., APA, 1994; Kaplan, 1974). The data to be presented were collected as part of a larger study examining the diagnostic reliability of vaginismus and the utility of vaginal spasm as the defining taxon. In this study (Reissing, Binik, Khalifé, Cohen, & Amsel, 2002), 29 women with vaginismus were matched to 29 women with vulvar vestibulitis syndrome (VVS) and 29 women experiencing no penetration problems or pain with intercourse. The inclusion of the VVS group was particularly important because there have been numerous suggestions that this syndrome is difficult to differentiate from vaginismus (Basson, 1996; Har-Toov, Militscher, Lessing, & Abramov, 2001; Pukall, Reissing, Binik, Khalifé, & Abbott, 2000; Wijma, Jansson, Nilsson, Hallböök, & Wijma, 2000). The study protocol included comprehensive physiological examinations by gynecologists and physical therapists, vaginal surface EMG evaluations, and an interview protocol that included measures of pain, sexual knowledge and functioning, sexual self-schema, sexual and physical abuse history, and psychological and relationship adjustment.

A crucial theoretical and practical issue in the larger study was that an investigation of vaginal spasm as the essential DSM-IV diagnostic criterion in

vaginismus (APA, 1994) could not require its a priori existence. This required a behavioral definition of vaginismus that could not include vaginal spasm. The behavioral criterion used below relies on a history of vaginal penetration failure, which is part of the DSM-IV criterion and is typically what clinicians focus on in practice.

In this study, we hypothesized that women suffering from vaginismus, as opposed to women with VVS or no pain controls, would show the following: (a) higher rates of sexual and physical abuse; (b) increased levels of sexual dysfunction; (c) less sexual knowledge; (d) more negative and less positive sexual self-schema; (e) more relationship difficulties; and (f) and more psychological distress.

## MATERIALS AND METHODS

### Participants

One hundred ten women responded to newspaper advertising and media attention. Potential subjects were screened over the telephone and the study was explained to them in detail. If appropriate, an initial appointment was scheduled. The research protocol was carried out at the participating gynecologists' office and was spread over 4 separate sessions with a minimum of two days between each session. The interview protocol and all questionnaires were administered at the first appointment.

Eleven women who met the inclusion criteria for the no pain group and two women who met the inclusion criteria for the vaginismus group dropped out of the study; all women who met the inclusion criteria for VVS completed the protocol. The data from 1 woman who met the inclusion criteria for the vaginismus group and 3 who met criteria for the VVS group were not used in the data analysis because these individuals could not be matched. Five women who met inclusion criteria for vaginismus were excluded from the study following a diagnosis of hymeneal abnormality, and one woman was excluded because of the presence of a vaginal septum. The data from 87 women in total were included in the analyses. Participants were tested between November 1998 and February 2000.

Inclusion criteria for the different groups were as follows

#### Vaginismus group:

- A. Unable to experience vaginal intercourse, despite attempts on at least 10 separate occasions, or
- B. Unable to experience vaginal intercourse despite attempts on *at least* two separate occasions and demonstration of *active avoidance* of vaginal penetration, or
- C. Currently unable to experience vaginal intercourse and active avoidance

of vaginal penetration for at least 1 year, although vaginal penetration was experienced at least once before this period

*Active avoidance* of vaginal penetration is defined as an average of less than one attempt at vaginal intercourse every 2 months over the past year despite adequate opportunity or being involved in a relationship and also meeting one of the following two criteria: (a) never having seen a health professional for or never having successfully completed a pelvic exam; (b) never having used tampons.

Vulvar Vestibulitis (VVS) group:

- A. Able to experience vaginal penetration but penetration is painful on at least 50% of all episodes, and
- B. Experiencing pain located at the entrance of the vagina, starting with vaginal penetration, which is described as burning or cutting, which is personally distressing and has been present for at least 1 year

No-pain group:

- A. Able to experience vaginal penetration without difficulty and
- B. Demonstrating no history of chronic or recurrent vulvar/vaginal/pelvic pain or penetration difficulty during intercourse, gynecological examinations, or tampon insertion

Specific exclusion criteria for the vaginismus group included the presence of hymeneal abnormalities. When such abnormalities were detected during the initial gynecological examination, the individual was referred for a surgical consultation and dropped from the study. General exclusion criteria for all experimental groups included (a) presence of or a history of chronic vulvar/vaginal/pelvic pain not uniquely linked to intercourse and (b) concurrent pregnancy.

Groups were matched on age ( $\pm 3$  years), relationship status (single/dating, common law/married) and parity (experienced childbirth/have not experienced childbirth). The mean age of the participants was 28 years (range = 18–43). Fifty-three percent of women spoke French, 31% spoke English, and 16% had another first language. Seventy-five percent were born in North America, 13% were of European origin, and 12% were born elsewhere. Sixty-one percent of the participants were Catholic, 15% were Protestant, 15% belonged to another religion, and 11% reported no religious affiliation. Women in this study had an average of 16 years of education (equivalent to an undergraduate degree), and their annual average income was \$45,000. Twenty-three percent of the participants were married, 25% were living with a partner, 32% were dating one partner regularly, and 20% were single. Three participants were primiparous.

## Measures

### SEXUAL AND PHYSICAL ABUSE HISTORY QUESTIONNAIRE (LESERMAN, DROSSMAN, & ZHIMING, 1995)

We used this 14-question structured interview to assess individuals' history of sexual and physical abuse. Interview items involved behaviorally specific questions (e.g., "By using force or threatening to harm you, has anyone ever made you watch a sexual act?"). For each behavioral item, participants also were asked to indicate whether this had occurred during childhood ( $\leq 13$  years old) and/or adulthood ( $\geq 14$  years old). Leserman et al. (1997) reported acceptable psychometric properties for the interview. Using translation and back-translation by a professional translation service, we obtained a French version.

The measure assesses sexual abuse along three categories, with 2 to 5 questions for each category: (a) attempts at sexual abuse (the participant having been forced to watch a sexual act, an abuser unsuccessfully having tried to touch or be touched, or an abuser having attempted to force sexual experiences not involving touch); (b) sexual abuse involving touch (the participant having experienced forced sexual touching or being touched with hand, mouth, or objects); and (c) rape (forced vaginal or anal penile penetration). For the purposes of this study, we collapsed these three categories to form a single measure of "sexual interference." We employed this strategy to ameliorate any effects of overestimation of sexual abuse events. For example, a woman who had experienced an unsuccessful attempt of forced sex could have indicated both "attempts at sexual abuse" and "sexual abuse involving touch" to describe the same event, since the perpetrator may have touched the victim sexually in the attempt to force sex. Thus, groups were compared on whether they had or whether they had not experienced sexual interference in childhood and/or adulthood. The measure also included a single question to assess physical abuse: "Has anyone—including family members or friends—ever beat you up, hit you, kicked you, bit you, or burned you, regardless of when it happened or whether you ever reported it or not?"

### SEXUAL HISTORY FORM (NOWINSKI & LOPICCOLO, 1979)

This is a 28-item measure of sexual functioning (desire, arousal, orgasm, frequency of sexual activities, overall sexual satisfaction). Ratings on 12 of the original 28 items are summed to form the overall Global Sexual Functioning Score, which we used in this study and which has demonstrated good reliability and validity (Creti et al., 1998). The mean score is 53, and lower scores indicate better sexual functioning; scores higher than 68 are considered indicative of sexual dysfunction.

**SEXUAL INFORMATION SCALE (DEROGATIS & MELISARATOS, 1979)**

This questionnaire, which evaluates participants' general knowledge of sexuality and reproduction, is part of the Derogatis Sexual Functioning Inventory, which is used widely and has demonstrated good reliability and validity (Derogatis & Melisaratos, 1979). The scale consists of 26 true-false items with a mean score of 21.

**SEXUAL SELF-SCHEMA (ANDERSEN & CYRANOWSKI, 1994)**

The Sexual Self-Schema (SSS) is an unobtrusive, multidimensional measure of sexual cognition or sexual self-views. The scale contains 26 trait adjectives (e.g., open-minded, cautious) and 24 filler adjective (e.g., generous, practical). Items are rated on a 6-point scale ranging from "not at all descriptive of me" to "very descriptive of me." Two subscales describing "loving/romantic" and "direct/open" dimensions of sexual cognitions are combined to derive a score for the positive sexual self-schema. The "embarrassed/conservative" dimension represents the negative sexual self-schema. Several studies have been conducted on the SSS to establish reliability and validity of the scale (e.g., Cyranowski, Aarestad, & Anderson, 1999; Cyranowski & Anderson, 1998). A professional translating service translated and back translated the measure to obtain a French version.

**LOCKE-WALLACE MARITAL ADJUSTMENT SCALE (LOCKE & WALLACE, 1959)**

This 15-item scale is a brief, standard measure of couple satisfaction that has been subjected to numerous validity and reliability studies (e.g., Crane, Allgood, Larson, & Griffin, 1990). It consists of ratings of couple agreement on a variety of marital issues (e.g., "handling family finances"). The ratings range from "always agree" to "always disagree"; there is an overall "happiness" rating on a 7-point Likert scale and six multiple-choice items (e.g., "do you confide in your mate?": a) "almost never," b) "rarely," c) "in most things," d) "in everything"). Ratings on the items are summed to derive an overall score with a mean of 100. We asked only couples that had been cohabiting for at least 1 year to fill out this questionnaire.

**BRIEF SYMPTOM INVENTORY (DEROGATIS, 1992)**

We evaluated psychological distress using the 53-item Brief Symptom Inventory (BSI), the short version of the widely used and well validated Symptom Check List-90 (Derogatis & Melisaratos, 1983). Participants indicate the extent to which they had experienced each symptom, ranging from "not at all" to "extremely." The BSI includes 9 subscales (somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, paranoid ideation, psychoticism, phobia, and hostility) that are combined to derive the Global Severity Index. The norm for female populations is 50, with a clinical cut-off of 63.

**RESULTS**

We observed a significant relationship between group membership and reports of sexual interference only for sexual interference that occurred during childhood,  $\chi^2(N = 87, 2) = 6.15, p < .05$ . When we conducted pairwise comparisons among the three groups using the Bonferroni method to control for Type I error at the .05 level, we observed a significant difference between the vaginismus and no-pain groups,  $\chi^2(N = 58, 1) = 6.05, p = .017$ . The women in the vaginismus group were twice as likely to report a history of childhood sexual interference than women in the no-pain group. A summary and breakdown of the types of sexual abuse (i.e., attempts at sexual abuse, sexual abuse involving touch, and rape) is presented in Table 1.

No significant relationship between group membership and physical abuse history was observed for physical abuse occurring during childhood,  $\chi^2(N = 87, 2) = 2.31, p = .32$ , or during adulthood,  $\chi^2(N = 87, 2) = 2.24, p = .89$  (see Table 1).

Significant group differences in sexual functioning were noted,  $F(2, 85) = 25.19, p < .001$ . Tukey HSD post-hoc comparisons revealed that women in the vaginismus ( $M = 52.57$ ) and in the VVS groups ( $M = 56.72$ ) had significantly higher scores than women in the no-pain group ( $M = 38.00$ ). Lower scores indicate better adjustment. When we examined individual items, we observed that women in the vaginismus and VVS groups reported less desire,  $F(2, 85) = 11.1, p < .001$ , less pleasure,  $F(2, 85) = 11.7, p < .001$ , less arousal,  $F(2, 85) = 12.1, p < .001$ , and less self-stimulation,  $F(2, 85) = 9.3, p < .001$ , than the women in the no-pain group (see Table 2).

We observed significant difference in positive sexual self-schema,  $F(2, 85) = 3.26, p < .05$ . Tukey HSD post-hoc comparisons revealed that women in the vaginismus group ( $M = 76.59$ ) have a significantly less positive sexual self-schema compared to the women in the no-pain group ( $M = 84.86$ ). We

**TABLE 1.** History of Sexual Interference and Physical Abuse During Childhood and Adulthood

Groups	Vaginismus	Dyspareunia (VVS)	Control
History of childhood sexual interference (≤ 13 years old)			
Attempts at sexual abuse	11	6	5
Sexual abuse involving touch	12	7	6
Rape	0	0	0
History of adulthood sexual interference (≥ 14 years old)			
Attempts at sexual abuse	9	8	6
Sexual abuse involving touch	9	8	6
Rape	1	3	5
History of childhood physical abuse (≤ 13 years old)	10	6	7
History of adulthood physical abuse (≥ 14 years old)	3	4	4

TABLE 2. Sexual Self-View, Sexual Knowledge, Relationship Adjustment, and Sexual Functioning

Groups	Vaginismus (N = 29)	VVS (N = 29)	No pain (N = 29)
Sexual self-schema			
Positive sexual self-schema	76.59 (SD = 12.32)*	80.55 (SD = 12.42)	84.86 (SD = 12.28)*
Negative sexual self-schema	22.52 (SD = 6.59)	21.31 (SD = 7.18)	20.03 (SD = 6.69)
Sexual Knowledge Scale	48.07 (SD = 10.26)	48.34 (SD = 8.63)	50.59 (SD = 12.05)
Loxke-Wallace Marital Adjustment	102.69 (N = 13; SD = 27.12)	108.00 (N = 16; SD = 20.82)	120.08 (N = 13; SD = 18.37)
Sexual history form	52.57 (SD = 11.76)	56.72 (SD = 11.54)	38.00 (SD = 7.91)*
Self stimulation	7.33 (SD = 2.18)	7.64 (SD = 1.63)	5.21 (SD = 2.22)*
Feelings of sexual desire	4.78 (SD = 1.30)	5.08 (SD = 1.82)	3.04 (SD = 1.79)*
Pleasure with sexual activity	2.33 (SD = 1.1)	2.8 (SD = 1.15)	1.25 (SD = .52)*
Arousal with sexual activity	2.00 (SD = 1.22)	2.20 (SD = 1.12)	1.04 (SD = .19)*

Note. Self stimulation: 5 = 1 week, 6 = 2 month, 7 = 1 month, 8 = less than 1 month; feelings of sexual desire: 3 = 3-4 times/week, 4 = 2 week, 5 = 1 week; pleasure with sexual activity: 1 = 90% and more of the time, 2 = 75% of the time, 3 = 50% of the time; arousal with sexual activity: 1 = 90%, and more of the time, 2 = 75% of the time, 3 = 50% of the time.

\*  $p < .05$



found no significant differences among women in the no-pain and VVS groups ( $M = 80.55$ ; see Table 2).

Participants did not significantly differ in their knowledge of basic information on sexuality, as assessed by the Sexual Knowledge Scale,  $F(2, 85) = .51, p = .61$ . Mean scores were  $M = 48.07$  for the vaginismus group,  $M = 48.35$  for the VVS group, and  $M = 50.59$  for the no-pain group (see Table 2).

There were no group differences in marital adjustment, as measured by the Locke-Wallace Marital Adjustment Scale,  $F(2, 41) = 2.09, p = .14$  (see Table 2). Mean scores were  $M = 102.69$  for the vaginismus group,  $M = 108.00$  for the VVS group, and  $M = 120.08$  for the no-pain group.

Women in the vaginismus group did not demonstrate more psychological distress, compared to their VVS and no-pain counterparts,  $F(2, 85) = 1.53, p = .22$ . Scores on the Global Severity Index (GSI) for the vaginismus ( $M = 56.97$ ), VVS ( $M = 59.00$ ), and no-pain groups ( $M = 60.55$ ) indicated levels of psychological distress that were below the clinical cut-off.

## DISCUSSION

The results of this study support two of the traditionally associated etiological correlates of vaginismus. More women in the vaginismus group reported a history of childhood sexual interference and held less positive attitudes about their sexuality. This was consistent with reports in the literature that *early* negative sexual experiences may play a role in the etiology of vaginismus (e.g., Biswas & Ratnam, 1995). Definitional problems, however, tend to compromise the interpretation of research on childhood sexual abuse (Goldman & Padayachi, 2000). Nonetheless, our relatively conservative data analytic strategy resulted in women in the vaginismus group being twice as likely to have a history of sexual interference. Replication of this study with a larger sample size and a better quantification of sexual abuse is necessary to confirm these findings and to provide additional information on the potential role of specific types and severity of childhood sexual abuse in the development of vaginismus.

Our findings confirmed a less positive sexual self-schema in vaginismic women but not a more negative self-schema. Sexual attitudes frequently are regarded as one-dimensional, and a lack of positive attitudes is considered synonymous with negative attitudes. However, Anderson and Cyranski (1994) suggested two independent dimensions of sexual self-views, positive and negative. The less positive sexual self-view of women with vaginismus could be considered consistent with their sexual behavior but could have also preceded the development of vaginismus. Our observation of no differences in negative sexual self-views stands in contrast with the DSM-IV (APA, 1994), which notes that vaginismus "is more often found . . . in females with negative attitudes towards sex" (p. 514).

One of the more consistent observations in the literature (e.g., Beck, 1993; Drenth, 1988; Ghavami-Dicker, 1988; Hawton & Catalan, 1990; Kaplan, 1974; Lamont, 1978; Silverstein, 1989) and the DSM-IV (APA, 1994) has been that the sexual response of women with vaginismus remains unaffected if penetration is not attempted or anticipated. In contrast, we found notable differences in sexual desire, arousal, pleasure, and self-stimulation in women with vaginismus. However, the Sexual History Form does not differentiate between penetrative or nonpenetrative difficulties. In addition, the cross-sectional design makes it impossible to determine whether the comparatively lower sexual functioning of women with vaginismus is the result of vaginal penetration problems or a determining factor in the development of vaginismus.

A further noteworthy finding of this study was the similarity between the vaginismus and VVS groups compared to the no-pain group on measures of sexual function and sexual self-view. Women with VVS also demonstrated less positive sexual self-views and lower overall sexual function. The difference in childhood history of sexual abuse may indicate a different etiology of vaginal penetration difficulties for women with vaginismus, but the clinical presentation of both disorders appears to be very similar (de Kruiff, ter Kuile, Weijnen, & van Lankveld, 2000). These findings lend further support to recent reports suggesting that vaginismus and dyspareunia exist on a continuum and are clinically difficult to distinguish (e.g., Kaneko, 2001; Ng, 1999).

Other correlates of the etiology of vaginismus, lack of sexual knowledge, lower relationship adjustment, and physical abuse, could not be confirmed by this study. In addition, women with vaginismus did not demonstrate increased levels of psychological distress. The results of the Locke-Wallace Marital Adjustment Scale, however, are based on a small sample, which was reduced for the relationship measure because only half of the sample was in a committed relationship at the time of the study. Small or moderate effects may not have been detected.

## CONCLUSIONS

Vaginismus has been considered "a most perplexing problem" (Leiblum, 2000, p. 182), however, etiological research has been lacking. The results of this study challenge the research and clinical community to take a second look at the traditionally held beliefs about etiology and the resulting conceptualizations of vaginismus. We suggest that unwanted sexual experiences during childhood may affect the development of positive cognitive representations of the self as sexual and may put the individual at risk for developing sexual difficulties or for responding negatively to transient sexual problems (Cyranowski & Anderson, 1998). Low desire and arousal or pain with intercourse, for example, in turn may result in *symptoms* such as vaginal

muscle tension and avoidance of penetration. If this view is correct, treatment for vaginismus must go beyond the focus of working on vaginal containment toward a more holistic and developmental view of women's sexuality (e.g., Kleinplatz, 1998; Shaw, 1994).

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