A Psychophysiological Investigation of the Pelvic Floor. The Mechanism of Vaginism
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The diagnosis of vaginismus - Are women with pelvic floor symptoms distinguishable from other women with the aid of an anamnestic questionnaire?

In women with vaginismus, a gynecological examination is often performed for therapeutic or educational purposes. However, most publications find a completed gynecological examination the only acceptable diagnostic criterion. Taking into account the psychological impact of a gynecological examination, the opinion about a gynecological exam as prerequisite for the diagnosis of sexual dysfunctions is changing. This study assessed the possibility of distinguishing women with complaints related to pelvic floor dysfunction from women without these complaints. Questionnaires of 111 women were rated by two observers, resulting in an inter-rater reliability of 79%. Twenty-one women were physically examined by a sexologist. The physical examination and the questionnaires revealed the same outcome for eighteen women (86%). The three cases of disagreement, were not caused by substantial different findings but by the final decision whether to interpret the findings as symptoms of pelvic floor dysfunction. These findings indicate that an anamnestic questionnaire is a useful instrument for the detection of symptoms related to sexual and pelvic floor dysfunction. There is no reason to require a gynecological examination as prerequisite for the diagnosis of pelvic floor problems.
Introduction

Although the descriptions of vaginismus in the literature accentuate different details, general agreement exists on the involuntary contraction of the pelvic floor muscles and the interference of this contraction with sexual penetration as characteristics for the dysfunction. Hardly any attention is paid to the diagnostic procedure of vaginismus. Recently, Reissing, Binik and Khalife (1999) underlined that no published studies have either examined the validity of vaginismus as a diagnostic entity or investigated the reliability of this diagnosis. Between the lines, most publications find a completed gynecological examination the only acceptable diagnostic criterion (e.g. Fertel, 1977; Bramley, Brown, Draper & Kilvington, 1981; Stanley, 1987; Silverstein, 1989).

However, from the literature arises the impression that the gynecological examination is in most cases used as therapeutic tool, for educational purposes or to observe a woman’s reaction, “her feelings of fear, guilt, shame or shyness,” and her fantasies (Bramley et al., 1981, p. 820). Although most studies mention the possibility of physical causes of vaginismus, it is at the same time stressed that these are rare.

A gynecological exam to exclude a somatic cause of the complaints is often motivated by the coexistence of dyspareunia. Even in this case, some authors advise to leave out or postpone the gynecological examination, or to reduce it to inspection of the external genitalia (Van Lunsen, Duyvis & Stam, 1989).

A gynecological exam as prove of vaginismus is not a valid criterion for the diagnosis, since false negative outcomes are predictable. Women with vaginismus who are able to relax during a gynecological examination and are able to use menstrual tampons are no exception. However, this does not imply that the vaginismus is less serious in these women (Beck, 1993; Bezemer, 1989).

A gynecological exam to exclude other sexual dysfunctions meets with the problematic differentiation between the different sexual dysfunctions as described in for example the DSM-IV (American Psychiatric Association, 1994). Both vaginismus and dyspareunia are not well defined and as a consequence the concepts are interpreted in different ways (Meana & Binik, 1994). Moreover, the definition of dyspareunia without presence of vaginismus is not relevant for daily practice (Van Lunsen et al., 1989). Van Lankveld, Breuweys, Ter Kuile and Weijenborg, (1995) investigated the possibility of distinguishing among women with dyspareunia, vaginismus and mixed sexual pain disorder. They concluded that these women have many common characteristics. They stated that when a clinician stops the anamnestic interview as soon as for example the diagnostic criteria for dyspareunia are met, the presence of other diagnoses may be overlooked. Another example is vulvar vestibulitis syndrome in which vaginismus often plays a role. Primary vaginismus may be a causal factor in the development of vulvar vestibulitis syndrome, and a secondary vaginistic reaction to pain may arise (Schover, Youngs, & Cannata, 1992; Ramakers & Van Lunsen, 1997).

The role of pelvic floor function in these sexual dysfunctions is considered increasingly important. Multiple signs of pelvic floor muscle overactivity may be present in women with complaints in the pelvic floor region. For example, Abramov, Wolman and David (1994) and Goetsch (1996) described that treatment of vulvar vestibulitis syndrome was not effective as complaints of vaginismus were not resolved first. In vulvar vestibulitis syndrome there is often evidence for overactivity of the pelvic floor (De Jong, Van Lunsen, Robertson, Stam & Lammes, 1995; Weijmar
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Gradually, the opinion about a gynecological exam as prerequisite for the diagnosis of sexual dysfunctions is changing. Taking into account that differentiation of the different dysfunctions is not always possible and that overactivity of the pelvic floor contributes to dyspareunia, vaginismus and vulvar vestibulitis syndrome, in the majority of cases the diagnosis can be found on anamnesis only (e.g. Drenth, 1988, Van Lunsen et al. 1989). The gynecological exam can be a traumatic experience by itself, has an enormous psychological impact and should be performed on strong explicit medical indication only (e.g. Bezemert, 1989; Pedersen & Mohl, 1992). Vaginismus should be freed from the narrow minded medical approach of vaginismus as a vaginal spasm, with success of treatment defined as successful penetration or pregnancy (Sjenitzer, 1980; Ward & Ogden, 1994).

If a questionnaire turns out to be a useful instrument to distinguish women with pelvic floor complaints from women without these complaints, a gynecological or physical examination can be postponed to the most optimal moment for the patient. In this study we assessed the possibility to determine the presence of pelvic floor complaints by the use of an anamnestic questionnaire. We investigated the agreement between subjective report of the women, physical examination and the answers to the questionnaire.

Methods

Subjects
Subjects were 111 women with or without pelvic floor complaints who were willing to participate in research on vaginismus. Forty-six women reported they were suffering from vaginismus and 65 were control subjects. Ages ranged from 18 to 48 years, with a mean of 24.7 (SD = 6.1). The mean age of the subgroup of women (N = 21) who underwent the physiological examination was 29.1 years (SD = 7.3).

Procedure
Before participation in one of the studies, women filled out questionnaires about pelvic floor function and sexual functioning. These questionnaires were used for the diagnostic procedure and to decide if women met the inclusion criteria for the study on vaginismus.

In one of the studies, a physical examination was part of the experimental procedure. Twenty-one women were seen and physically examined by an experienced medical trained sexologist, who was blind for the answers to the questionnaires. During this physical examination, muscle volume, muscle tone, voluntary control over pelvic floor muscles, and relaxation were assessed. The visit to the sexologist resulted in a statement about the presence of a sexual dysfunction and/or pelvic floor problems.

Scoring of data
Two independent raters assessed the questionnaires to determine whether, according to the questionnaire, there were problems with pelvic floor function. Women were divided in three groups; a control group with no pelvic floor complaints, a group with
complaints related to one of the openings in the pelvic floor, and a group with complaints related to more than one opening of the pelvic floor.

To determine the inter-rater reliability, kappa (K) was calculated. Kappa is a coefficient of inter-judge agreement for nominal scales, taking into account the amount of agreement to be expected by chance. It is interpretable as the proportion of joint judgements in which there is agreement, after chance agreement is excluded (Cohen, 1960; Veldhuyzen van Zanten & Hijdra, 1988).

The diagnosis of the sexologist was compared to the diagnosis of the raters of the questionnaire and to the subjective report of the women.

Results

Questionnaires

The rating of the observers of the 111 questionnaires are presented in Table 1. Agreement existed about 38 women in category 1 (no pelvic floor complaints), 24 women in category 2 (complaints related to one of the openings in the pelvic floor), and 33 women in category 3 (complaints related to more than one opening of the pelvic floor). The rating of the observers differed in 6 cases. The inter-rater reliability was $\kappa = 0.79$, indicating that of the agreement that possibly could be reached above chance 79% is realized.

<table>
<thead>
<tr>
<th>Rating</th>
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<th>Rater 1</th>
<th>Rater 2</th>
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<td>Total</td>
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<td>43</td>
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<td>38</td>
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Table 1. Rating of two observers of 111 questionnaires.

Physical examination

Twenty-one of the women underwent a physical examination. Based on history and physical examination fourteen women were diagnosed as having a sexual or pelvic floor dysfunction. Seven were women without symptoms of sexual or pelvic floor dysfunction.

Agreement between physical examination and questionnaires

The physical examination and the questionnaires revealed the same outcome for eighteen of the twenty-one women (86%). In all three cases of disagreement, the physical examination showed no abnormalities, while the questionnaires indicated symptoms related to one of the openings of the pelvic floor. About one of the cases there had been disagreement between the observers with one observer indicating no sexual or pelvic floor symptoms.

The first case is a women who reports on the questionnaire to have vaginistic reactions at every attempt of penetration. She is able to use menstrual tampons, but has never had sexual intercourse, despite her wish to have so. During the gynecological
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Exam no vaginistic reaction is seen and voluntary control over pelvic floor muscles is good. The second case reports problems related to pelvic floor function, with symptoms as urinary frequency, problems with defecation and dyspareunia in half of the attempts of coitus on the questionnaire. During the physical examination a light tendency to a continuous overactivity of the pelvic floor was seen, however, in the final decision both sexual and pelvic floor function were considered as normal. In the third case, the reason for disagreement between the observers was the severity of the presented pelvic floor problems. This woman reported some urinary frequency, urinary incontinence and a tendency to hold urine on an infrequent basis. The urinary frequency was also noted during the physical examination.

Agreement between physical examination, questionnaires and subjective report

Again there were three cases of disagreement between subjective report and physical examination. Two of these cases are women discussed before (case 1 and case 2). They subjectively reported complaints of vaginismus. The third woman made herself known as control subject (case 4). However, physical examination revealed a functional overactivity of the pelvic floor muscles in this woman. In addition, the questionnaires showed signs of urinary frequency, hesitation, post-void residual urine, and tendency to hold urine.

There was disagreement between the subjective report and the questionnaires in the third case described above.

Discussion

Investigation of sexual and pelvic floor complaints with the aid of an anamnestic questionnaire resulted in high inter-rater reliability. Agreement between a diagnosis based on pelvic floor examination and the questionnaires was high. More important, the few cases of disagreement, were not caused by substantial different findings but by the final decision whether to interpret the findings as symptoms of pelvic floor dysfunction. No new somatic causes of the presented symptoms were found during the physical examination.

These findings indicate that an anamnestic questionnaire is a useful instrument for the detection of symptoms related to sexual and pelvic floor dysfunction. Although the advantages of a physical or gynecological examination remain, there is no reason to require such examination as prerequisite for the diagnosis of pelvic floor problems.
The table below illustrates the distribution of symptoms across different groups.

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<tr>
<th>Reaction</th>
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<td>Reaction 2</td>
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<td>Reaction 3</td>
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In all three cases of disagreement, the physical examination showed that no abnormalities were present, while the questionnaires indicated symptoms related to one of the openings of the gallbladder. About one of the cases, there was body asymmetry between the questionnaires with one abnormal indicating no serious underlying diseases.

The first case is a young sick girl reporting the questionnaires to have symptoms occurring at every menstrual cycle. She is able to use menstrual tampons, but has never had sexual intercourse, despite her wish to have sex. During the gynecological