Automatic and Deliberate Affective Associations with Sexual Stimuli in Women with Lifelong Vaginismus Before and After Therapist-Aided Exposure Treatment

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DOI: 10.1111/jsm.12360

ABSTRACT

Introduction. The intense fear response to vaginal penetration in women with lifelong vaginismus, who have never been able to experience coitus, may reflect negative automatic and deliberate appraisals of vaginal penetration stimuli which might be modified by exposure treatment.

Aims. The aim of this study is to examine whether (i) sexual stimuli elicit relatively strong automatic and deliberate threat associations in women with vaginismus, as well as relatively negative automatic and deliberate global affective associations, compared with symptom-free women; and (ii) these automatic and more deliberate attitudes can be modified by therapist-aided exposure treatment.

Methods. A single target Implicit Association Test (st-IAT) was used to index automatic threat associations, and an Affective Simon Task (AST) to index global automatic affective associations. Participants were women with lifelong vaginismus (N = 68) and women without sexual problems (N = 70). The vaginismus group was randomly allocated to treatment (n = 34) and a waiting list control condition (n = 34).

Main Outcome Measures. Indices of automatic threat were obtained by the st-IAT and automatic global affective associations by the AST, visual analogue scales (VAS) were used to assess deliberate appraisals of the sexual pictures (fear and global positive affect).

Results. More deliberate fear and less global positive affective associations with sexual stimuli were found in women with vaginismus. Following therapist-aided exposure treatment, the strength of fear was strongly reduced, whereas global positive affective associations were strengthened. Automatic associations did not differ between women with and without vaginismus and did not change following treatment.

Conclusions. Relatively stronger negative (threat or global affect) associations with sexual stimuli in vaginismus appeared restricted to the deliberate level. Therapist-aided exposure treatment was effective in reducing subjective fear of sexual penetration stimuli and led to more global positive affective associations with sexual stimuli. The impact of exposure might be further improved by strengthening the association between vaginal penetration and positive affect (e.g., by using counter-conditioning techniques). **Melles RJ, ter Kuile MM, Dewitte M, van Lankveld JJDM, Brauer M, and de Jong PJ. Automatic and deliberate affective associations with sexual stimuli in women with lifelong vaginismus before and after therapist-aided exposure treatment. J Sex Med 2014;11:786–799.**

Key Words. Appraisal; Associations; Automatic; Vaginismus; Exposure; Sexual Pain

Introduction

In the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision (DSM IV-TR), vaginismus was defined as an involuntary contraction of the musculature of the outer third of the vagina interfering with intercourse, causing distress and interpersonal difficulty [1]. Results of empirical studies did, however, not support the main criterion of vaginal spasm as a critical feature of vaginismus and *emphasized* the role of fear/pain and phobic avoidance as factors

that interfere with the declared wish of the women to experience sexual intercourse [2]. Because of persistent difficulties in differentiating, vaginismus and dyspareunia have been combined in the DSM V into "genito-pelvic pain/penetration disorder" [3]. Vaginismus can be classified as lifelong or acquired. Women with lifelong vaginismus have never been able to experience coitus. In acquired vaginismus, women lose the ability to experience coitus after a period of nonsymptomatic functioning. Pain, fear of pain, and pelvic floor dysfunction are common in the majority of women with vaginismus and make it difficult to distinguish vaginismus from other sexual pain disorders, specifically with dyspareunia [2,4–10]. Yet there is a marked difference between women with vaginismus and women with dyspareunia regarding their response to pelvic examination: In these contexts, women with vaginismus show more intense fear responses (e.g., fear of pain) as well as heightened defensive and avoidant distress behavior, despite the declared wish to be able to allow penetration. During pelvic examinations, some patients may cry, withdraw from the examiner, and/or try to leave the examination room probably all because of the intense fear that is elicited at the prospect of any form of vaginal penetration [2]. The first aim of the present study is to investigate whether the intense fear response in women with vaginismus is elicited by automatic and deliberate threat appraisals of sexual (penetration) stimuli.

There is evidence that (the anticipation of) fearful occurrences give rise to involuntary contractions of the pelvic floor muscles. This response is considered as part of a general defense mechanism (e.g., [11]). Interestingly, there is evidence that the anticipation of pain or harm associated with vaginal penetration can similarly elicit defensive contractions in women with vaginismus [12], which in turn may lead to increased genital pain experiences. All in all, it seems that fear- avoidance mechanisms are crucially involved in vaginismus. Following this, it has been argued that vaginismus might be conceptualized as a specific phobia of vaginal penetration [13]. To the extent that the vaginistic reaction indeed reflects a (vaginal penetration) fear-induced defensive reflex, prolonged exposure to vaginal penetration stimuli, and the consequent extinction of the fear response, would be helpful to reduce the vaginistic symptoms [14]. In support of this theoretical model, exposure therapy was found to be very effective in reducing symptoms of vaginismus [15]. Thus, there is converging evidence that phobic avoidance plays a key role in the maintenance of vaginismus.

Current cognitive models of anxiety emphasize the role of biased appraisals in the generation of phobic avoidance (e.g., [16]). Dual-process models [16–18] and information-processing models of sexual responding [19] emphasize the importance of differentiating between more automatic (initial) and more deliberate reflective appraisals. The initial appraisals are proposed to follow from the direct activation of simple associations in memory, whereas the more deliberate appraisals are assumed to be the result of more controlled, reflective processes. The encounter with vaginal penetration stimuli will thus elicit a relatively fast, nonintentional (automatic) affective appraisal, followed by a slower deliberate appraisal. The more automatic appraisals seem especially relevant in guiding relatively spontaneous (reflexive) behaviors, whereas the more deliberate appraisals seem most important for more controlled behaviors (e.g., [20,21]). Therefore, it seems reasonable to assume that especially the more automatically activated affective appraisals of particular sexual (penetration) stimuli are most relevant in eliciting the characteristic defensive reactions in women suffering from vaginismus, whereas more deliberate threat appraisals might give rise to more controllable defensive behaviors such as overt avoidance of vaginal penetration.

Germane to this, previous research provided tentative support for the view that both more deliberate (e.g., [2,13]) and more automatic negative [22] appraisals might be involved in vaginismus. However, it should be noted that the difference in automatic sex threat associations between women with vaginismus and women without sexual problems did not reach statistical significance in the latter, relatively small scale, study. To arrive at more solid conclusions regarding the relevance of automatic threat associations in vaginismus, it is therefore important to replicate this previous finding in a larger sample.

By now, there is considerable evidence that therapist-aided exposure treatment is successful in reducing subjective fear of penetration and vaginal penetration avoidance which is operationalized during the graded exposure in guiding the patient to induce fingers, dilators, and tampons vaginally [15,23]. However, it remains to be seen whether the more automatic threat appraisals are also affected by such intervention, especially when considering that automatic associations are assumed to be more rigid than deliberate reflective evaluations