REVIEW PAPER

PTSD and Sexual Dysfunction in Men and Women

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DOI: 10.1111/jsm.12856

ABSTRACT

Introduction. Difficulties in sexual desire and function often occur in persons with posttraumatic stress disorder (PTSD), but many questions remain regarding the mechanisms underlying the occurrence of sexual problems in PTSD.

Aim. The aim of this review was to present a model of sexual dysfunction in PTSD underpinned by an inability to regulate and redirect the physiological arousal needed for healthy sexual function away from aversive hyperarousal and intrusive memories.

Method. A literature review pertaining to PTSD and sexual function was conducted. Evidence for the comorbidity of sexual dysfunction and PTSD is presented, and biological and psychological mechanisms that may underlie this co-occurrence are proposed.

Main Outcome Measures. This manuscript presents evidence of sexual dysfunction in conjunction with PTSD, and of the neurobiology and neuroendocrinology of PTSD and sexual function.

Results. Sexual dysfunction following trauma exposure may be mediated by PTSD-related biological, cognitive, and affective processes.

Conclusions. The treatment of PTSD must include attention to sexual dysfunction and vice versa. **Yehuda R, Lehrner A, and Rosenbaum TY. PTSD and sexual dysfunction in men and women. J Sex Med 2015;12:1107–1119.**

Key Words. Sexual Dysfunction; Posttraumatic Stress Disorder; Neurobiology; Neuroendocrinology

Introduction

Although sexual dysfunction is not a specific symptom of posttraumatic stress disorder (PTSD), it is a frequent clinical complaint among trauma survivors [1–6]. PTSD is a stress-related condition that occurs following exposure to an extremely traumatic event, with an estimated population lifetime prevalence of 5.7% for men and 12.8% for women [7]. A traumatic event is defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM 5 [8]) as involving exposure to actual or threatened death, serious injury, or sexual violence. Even indirect exposure, such as witnessing or learning of a trauma to a loved one, can induce PTSD. Four symptom clusters have been defined in the recently revised DSM 5 [8]. (i) Intrusion symptoms include recurrent and unwanted memories, nightmares, flashbacks, and intense distress or physiological reactivity after exposure to traumatic reminders. (ii) Avoidance symptoms reflect effortful avoidance of trauma-related thoughts, feelings, or reminders. (iii) Negative alterations in cognitions or mood may include persistent negative beliefs about oneself or the world, negative emotions related to the trauma (such as guilt, shame, anger, horror), loss of interest in significant activities, feelings of alienation from others, and an inability to experience positive or loving emotions. (iv) Alterations in arousal and reactivity include irritability or aggression, self-destructive or reckless behavior, hypervigilance, exaggerated startle response, and problems with concentration and sleep. For a PTSD diagnosis,

symptoms must persist for at least a month following trauma exposure and cause clinically significant distress or functional impairment.

Symptoms of PTSD may interfere across the continuum of sexual behavior, including desire, arousal, activity, consummation, and satisfaction. For example, persons with PTSD may actively avoid sexual activity to minimize feelings of physical arousal or vulnerability that could trigger flashbacks or intrusive memories [9,10]. Because some symptoms of PTSD, such as nightmares, intrusive memories, and insomnia, are so distressing and result in such great restrictions in overall quality of life, sexual dysfunction is often not presented as a top priority by treatment-seeking patients. Trauma specialists may not inquire about their patients' sexual lives because they are unaware of the comorbidity of sexual dysfunction and PTSD, or because they fear that the treatment of sexual issues requires specific expertise outside of their purview.

Recent developments in PTSD neurobiological research now permit a discussion of the role of PTSD pathophysiology in sexual problems. Neuroanatomical circuits and neurochemical and endocrinological processes disrupted in PTSD are critical to those involved in all aspects of sexual behavior including desire, arousal, and orgasm (e.g., Zoladz and Diamond [11]). In this article, we suggest that sexual difficulties in PTSD occur because of an inability to regulate and redirect the physiological arousal needed for healthy sexual function away from hyperarousal and aggression circuits. This is because the very hormonal and neural circuit activation that normally leads to positively valenced sexual arousal and activity is already overactive in PTSD, but leads to anxiety, fear, and other PTSD symptoms. The pairing of physiological arousal with fear or horror may override healthy sexual functioning, so that arousal signals impending threat rather than pleasure. If the biology of PTSD primes an individual to associate arousal with trauma-associated threat, guilt, or shame, or impairs the ability to downregulate or contain the fear response, the biological cards may be stacked against sexual function and intimacy in PTSD by impeding the inhibitory neurobiological processes required for sexual activity. Specific mechanisms are described below.

Sexual Dysfunction in PTSD

Until recently, sexual dysfunction has been linked with exposure to sexual trauma rather than to the presence of PTSD or PTSD pathophysiology [12,13]. Studies of nonsexual trauma including combat, accidents, and criminal victimization have now also established an association with sexual dysfunction in men and women including sexual desire, arousal, orgasm, activity, and satisfaction (e.g., Letourneau et al. and other several studies [9,14–16]). Table 1 provides a review of the literature on sexual dysfunction in PTSD, showing that PTSD, rather than trauma exposure per se, is the more proximal antecedent to sexual problems. Sexual dysfunction is greater in exposed persons with PTSD, compared with similarly exposed survivors without, regardless of the nature of the trauma [1,9,21,22,26]. In a random, nonclinical sample of women, PTSD accounted for significant variance in sexual dysfunction outcomes (odds ratio = 2.3) after accounting for history of crime victimization, rape, injury during the crime, and depression [9]. The association has been explored in more detail in combat veterans. For example, a study of male combat-exposed veterans (n = 90) found overall rates of erectile dysfunction of 85% in veterans with PTSD compared with 22% in veterans without PTSD [1].

Interpretation of studies of sexual dysfunction in veterans has been complicated by participant age and length of disorder confounds, but more recent studies with veterans of wars in Iraq, Afghanistan, and Croatia document that sexual dysfunction is common even among relatively young combat veterans with PTSD [4,17]. For example, a recent study of 367 male active duty personnel and recent veterans aged 40 and under found that probable PTSD (as assessed by self-report) increased the likelihood of erectile dysfunction 30-fold and sexual dysfunction 6-fold, a greater increase than that associated with depression [28]. Sexual problems were also associated with reduced quality of life and lower happiness scores. Larger chart review studies have supported these findings. Among 4,755 male Afghanistan and Iraq veterans who sought treatment from Veterans Affairs medical centers, PTSD was a significant risk factor for sexual dysfunction for younger (<40 years) as well as older (>40 years) veterans [23]. A large, retrospective record review of 405,275 male Afghanistan and Iraq veterans (median age = 28) who were followed for at least 2 years found that veterans with PTSD were more likely to have sexual dysfunction and/or prescriptions for medications that treat sexual dysfunction (10.6%), compared with those with any other mental health diagnosis (7.2%) or no diagnosis (2.3%) [19]. After controlling for potentially