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Risk Factors for PTSD

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Abstract

Post-traumatic stress disorder develops in response to a traumatic experience and is characterized by features of re-experiencing the traumatic event, avoidance behaviors, numbing of responsivity, hyperarousal, and alterations in cognition.

Given that the majority of people exposed to traumatic events do not experience PTSD, what are the risk factors involved in the development of this pathology?

The present article contains some answers, but more research is needed for an enhanced understanding of the processes underlying stress-related disorders such as PTSD.

Keywords: PTSD; Risk factors; Protective factors

DSM-5 [1] frames PTSD in trauma- and stressor- related dissorders, among other diagnoses: reactive attachement disorder, disinhibited social engagement disorder, acute stress disorder, adjustment disorders. PTSD develops in response to a traumatic experience, which produces a massive effect on information-processing, on the anxiety system specifically [2]. PTSD is characterized by features of re-experiencing the traumatic event, avoidance behaviors, numbing of responsively, hyper arousal, and alterations in cognition. In DSM-5 two specifies were added to the diagnostic criteria: with dissociative symptoms (depersonalization, derealization), with delayed expression.

The National Comorbidity Survey found that 60.7% of men and 51.2% of women have experienced at least one DSM-III-R traumatic event in their lifetime, whereas a study using the DSM-IV stressor definition revealed rates of trauma exposure of 89.6% [3]. Rates of PTSD ranged from 1–9.2% in community-based studies, while PTSD occurred at higher rates among survivors of crime and disasters (20%), combat veterans (12,9%) and mass violence survivors (37%) [3].

Why does exposure to the traumatic event affect people differently? What is the difference between two people who are exposed to the same traumatic event, and one develops PTSD and the other halts progression of maladaptive psychopathology?

Lang k [4]. surveyed 2,224 MZ and 1,818 DZ pairs on fifteen PTSD symptoms taken from the three symptom clusters in the DSM-III-TR, and found that the heritability of all fifteen symptoms ranged from 32% to 45% [4].

Researchers have found some genes involved in PTSD, that encode: stathmin, a protein needed to form fear memories, gastrin-releasing peptide, a signaling chemical in the brain released during emotional events and serotonin, a neurotransmitter related to mood [5]. Homozygous carriers for the alpha2c Del322-325-AR (adrenoreceptor) polymorphism might be more vulnerable to PTSD [6].

In persons with PTSD, impairment in prefrontal cortex functioning (possible due to alterations in norepinephrine, serotonin, cortisol, and dehydroepiandrosterone levels) could compromise executive functioning and decrease inhibitory control of the amygdala with a resultant increase in fear-related behavior [6]. Shin et al. [7] suggested a neurocircuitry model of PTSD, hypothesizing a hyper responsively within the amygdala to threat-related stimuli, with inadequate top–down governance over the amygdala by the medial prefrontal cortex and the hippocampus [7].

Contradictory findings in hippocampal volume studies in PTSD suggested that smaller hippocampal volume might be a vulnerability marker for PTSD rather than a consequence of exposure to trauma or PTSD [8]. A consistent finding among the various PET studies showed the laterality of medial PFC regulation of emotional behavior in patients with PTSD [8].

A review of the information-processing studies suggested that individuals with PTSD were characterized by threat-related judgmental bias when the duration of the stimulus presentation allowed for conscious elaboration, maintaining the beliefs of vulnerability, the heightened arousal, and the hyper vigilance [9]. The symptoms from PTSD could be interpreted as the result of the failure to integrate the trauma into the system of belief about the self and reality [2].

Person-related risk factors that were correlated with PTSD are: prior affective, anxiety or substance abuse disorders, avoidant personality, per traumatic dissociation, lower intellectual functioning, and specific impairments in explicit memory and increased neurological soft signs, indicative of subtle nervous system dysfunction [10]. Lacks of internal locus of control and avoidant attachment style were identified as contributors to the development of PTSD [11].

Jaksic [12], Miller [13], Gil [14], Wu [15], Even found that PTSD was positively related to basic personality dimensions of negative emotionality, neuroticism, harm avoidance, novelty-seeking and self-transcendence, as well as to specific personality traits of hostility/anger and anxiety [12-16]. PTSD symptoms were negatively associated with personality dimensions of extraversion, conscientiousness, self-directedness, the combination of high positive and low negative emotionality, as well as with specific personality traits of hardiness and optimism [12].

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Reduced prepulse inhibition might represent an enduring psychophysiological marker of PTSD in some patients. Prepulse inhibition refers to the phenomenon in which a weak stimulus presented immediately before an intense startling stimulus inhibits the magnitude of the subsequent startle response [17].

The presence of body injury, living far from parents, female gender, lower education and income, being divorced or widowed, unemployment, loss of family members, family instability and the severity of trauma had significant correlations with the development of PTSD [10,11,18].

The study of childbirth-related PTSD identified the following antenatal risk factors - history of previous mental health difficulties, previous traumatic childbirth, trait anxiety, and perinatal risk factors - feelings of lack or loss of control over the event, intense emotional distress, and lack of support by medical staff and the partner [19].

The Di Gangi et al. [20] meta-analytic review (2003) of 2,647 articles that spanned 16 years found seven predictor categories for PTSD including prior trauma, prior psychological adjustment, family history of psychopathology, and perceived life threat during the trauma, post trauma social support, peritraumatic emotional responses, and peritraumatic dissociation [20].

The review of the Di Gangi et al. [20] of 54 prospective, longitudinal studies of posttraumatic stress articles underlined that some premorbid predictors of PTSD (from the categories of cognitive abilities, coping and response styles, personality factors, psychopathology, psychophysiological factors) could be considered aspects of post trauma psychopathology, emphasizing that there was still a long way until a thorough understanding about the relationship between trauma and PTSD [20]. Much research remains to be conducted on the interface between trauma-related neurotransmitter/ neurohormone alterations, regional brain function, psychological symptoms, and neuropsychological deficits and environmental factors in people with PTSD. More research may show what combinations of these or perhaps other factors could be used someday to predict who will develop PTSD following a traumatic event.

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