Trauma-Related Disorders: Sexual Abuse and Psychiatric Comorbidities

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13.1 What Is Trauma?

The term trauma comes from the Greek word τραῦμα (-ατος) that stands for "stroke or wound" and is a concept of difficult definition. In psychopathology, trauma can be defined as a lesion, an injury, or a wound of the psychic organism due to a single event or to a series of events that suddenly break out in a subject's life abruptly in a destructive way [1]. In addition, trauma can be defined as a real process throughout which the victim is concretely reduced *from subject to object*, where with subject we intend the person or the thing doing something and with object we intend the person or the thing that is having something done to [2]. The subject who happens to face a trauma is then victimized by human anger or by the fury of nature. Bowlby, already in 1969, argued that trauma is a process that takes place within the attachment relationships. Loss of family bounds, separations, and mournings are therefore considered obvious traumatic situations in this frame [1, 3].

According to DSM-5, trauma occurs when a subject happens to be exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. This exposure can be direct or indirect: the subject might have witnessed in person or indirectly the scene of trauma, or he could have learned that a close relative or close friend was exposed to that trauma. Moreover, the definition of trauma can include a repeated extremely indirect exposure to aversive details of a traumatic event; this is the case of first responders, obliged

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to collect body parts after disasters, or even the case of health professionals, repeatedly exposed to details of child sexual abuse.

13.2 Sexual Trauma

Child sexual abuse and *adult sexual violence* have been defined by the American Medical Association and by the US Centers for Disease Control and Prevention. The expression *child sexual abuse* is intended as an abusive behavior that can include fondling, rape, and noncontact abuse, such as forced involvement in child pornography or exhibitionism. The expression *adult sexual violence* is referred to as nonconsensual contact and noncontact acts that involve subjects that are more than 18 years of age. According to the US Centers for Disease Control and Prevention, *sexual violence* is precisely defined as completed or attempted penetration of the genitalia or the anus; contact between the mouth and the penis, vulva, or anus; or penetration of the anus or genital opening or intentional touching of the genitalia, anus, groin, breast, inner thigh, or buttocks. Noncontact acts include voyeurism and verbal or behavioral sexual harassment [4].

Sexual violence involves one woman out of five; in national surveys approximately 18.3% of women and 7.4% of men have reported experiencing rape at some time in their lives [5].

What is more, the National Intimate Partner and Sexual Violence Survey that was conducted by Black and colleagues in 2010 and 2011 highlighted that 5.6% of women and 5.3% of men experienced during the previous year sexual violence other than rape, such as being made to penetrate someone else, sexual coercion, unwanted sexual contact, or noncontact unwanted sexual experiences [6].

For what concerns the age of occurrence of trauma, the same survey reported that while the 42.2% of victims were first raped before age 18, the 29.9% were first raped between the ages of 11 and 17 and the 12.3% were first raped when they were aged 10 or younger [6].

13.3 From Trauma to Trauma-Related Disorders: Clinical Pathways

In a strictly neurobiological point of view, confrontation with trauma results in the release of important neurochemical factors, capable of compromising subjective integrative capacity and the ordinary process of neurodevelopment [7, 8].

Experiencing threat can alter the way in which the events are perceived as well as the emotional experience connected to them, triggering the biological chain of stress response and resulting in a substantial alteration of different important processes such as neurogenesis, migration, synaptogenesis, and neurochemical differentiation. Some of the consequences of the exposure to unpredictable or chronic stress include functional deficiencies and dramatic vulnerabilities to future stressors [9]. In humans, as in other animal species, two different reaction mechanisms are possible when

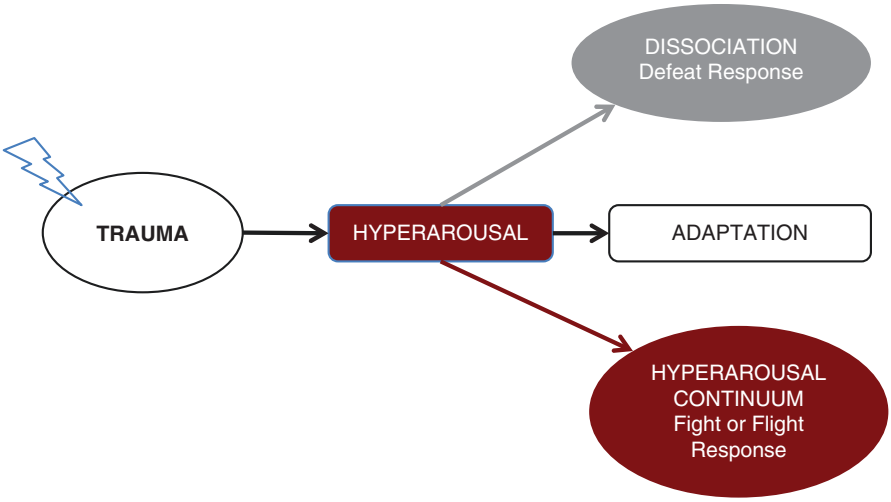

Fig. 13.1 Pathways of trauma

facing danger: the hyperarousal pathway (fight-or-flight response) and the dissociation pathway (defeat response) (Fig. 13.1); recent studies reported that these two different kinds of responses only share a part of their specific neurobiological mechanism [1]. The choice toward the first or the second option is related to different factors that not only include type, frequency, and intensity of trauma but also take into account the availability of a valid protection network for the subject. Several studies based on animal models have demonstrated, however, that excessive dangers, sexual trauma, or inadequate coping skills lead in most cases to defeat responses [10, 11]. In experimental animal studies that recreated inescapable shock patterns such as electric shocks or cold water swimming, the traumatic response is always characterized by helplessness, freezing phenomena, tonic immobility, analgesia, and dissociative states [8]. According to literature, peritraumatic stress reactions are substantial predictors of the development of a trauma-related disorder: in particular, the first hours following trauma are considered a critical window for interventions that aim at prevention of trauma-related disorders and have been characterized as the "golden hours" [12, 13]. Animal and human studies highlighted that memory consolidation occurs, in fact, during the first night's sleep following the exposure, supporting the rationale for immediate intervention [14]. Several neurotransmitter systems have been implicated in the etiopathogenetic mechanisms of trauma-related disorders; recent studies on children samples reported that a persistent traumatic stimulus can cause a permanent neurobiological modification of the subject's stress response [15]: these subjects show in fact increased urinary epinephrine, norepinephrine, and dopamine, alterations of alpha-2-adrenergic receptors, increase or decrease in baseline heart rate, altered EEG pattern suggesting limbic and cortical abnormalities, and altered development of some cortical areas [8]. Moreover, for what concerns the psychic response to trauma, an adequate resilience capacity is decisive: the ability to

"positively adapt" to different circumstances and the ability of being "flexible" in response to an adverse situation represents, in fact, a crucial protective factor for the occurrence of a trauma-related disorder after the event [16].

13.4 Trauma-Related Disorders

DSM-5 classifies *trauma- and stressor-related disorders* in a specific chapter, separated from *anxiety disorders* and *obsessive-compulsive disorder*. The symptoms that characterize the disorders included in this chapter typically develop after the occurrence of one or more traumatic or stressful events in which the subject is involved. While some of the disorders included originate in childhood, such as the *reactive attachment disorder* and the *disinhibited social engagement disorder*, others specifically address the adult population: the *acute stress disorder*, the *adjustment disorders*, and *post-traumatic stress disorder (PTSD)* [1, 17]. Unlike previous editions, specific PTSD criteria for patients under 6 years of age are also provided in DSM-5.

Reactive attachment disorder can be considered an internalizing disorder and consists of a persistent inability in social interaction that hesitates in inhibited responses, defensive hypervigilance, or highly contradictory behaviors.

The *disinhibited social engagement disorder* is characterized by a total lack of selectivity in the choice of attachment figures and by an indiscriminate sociability toward others. This disorder usually develops in response to an exceptional physical or mental stress in individuals that do not exhibit any other comorbid mental disorder; it typically regresses after a few hours or days. The *adjustment disorder* has been described in DSM-5 as a stress-response syndrome; it begins within 3 months from the occurrence of the stressful event, and it usually recovers within 6 months from the end of the stressful period. The most complex trauma-related disorder is PTSD.

This disorder is mainly characterized by intrusive re-experiencing symptoms and avoidant, numbing, and hyperarousal symptoms that start after the occurrence of an event that has threatened the subject's physical integrity or that has caused serious injury to the subject or to people related with him/her [8, 17]. In defining PTSD, DSM-5 specifically mentions sexual trauma, underlining the dramatic nature of this experience. The severity of the episodes is always assessed taking into account the ability of the subject to cope with the threat occurred, the symptoms "must cause clinically significant discomfort or interfere with important areas of functioning" [2, 16].

As mentioned before, unlike previous editions, DSM-5 lists specific criteria for patients under 6 years of age. PTSD symptoms may not be particularly manifest in children, these symptoms, in fact, are not often verbally expressed and therefore clearly communicated by children: a careful observation of the child's behavior can clarify the effects of trauma in these cases [18]. The clinical frame may include difficulties in interpersonal relationships, the development of an insecure disorganized attachment style, or the development of a contradictory behavior often characterized by episodes of aggression toward peers and difficulty in affective regulation [1,

18]. Several important factors, such as age, level of development at the time of trauma, child temperament, personal vulnerability, environmental and relational characteristics, trauma exposure, duration of trauma exposure, and level of intimacy with the possible aggressor, need to be considered in trying to determine the outcome of trauma exposure: these variables interact with each other producing different evolutionary frameworks.

PTSD diagnosis is over three times more frequent among women who were raped during childhood, and recent studies report that women who were victims of childhood sexual abuse are five times more likely to be diagnosed with PTSD in adulthood [19]: survivors of childhood sexual trauma are at high risk of developing PTSD. PTSD has an important incidence even after adulthood sexual violence: the reported rates of PTSD among rape survivors vary, in fact, from approximately 30% to 65% depending on how and when the PTSD symptoms are assessed [20].

Sexual violence is often associated with a particular type of PTSD, first described in 1992 by Judith Herman in the textbook *Trauma and Recovery*: the complex posttraumatic stress disorder (C-PTSD) [21]. C-PTSD is associated with forms of trauma that include prolonged subjection, totalitarian control, physical or emotional abuse, and every traumatic condition in which the victim concretely experiences an impossible escape. C-PTSD is a severe condition that may result in a progressive disintegration of the sense of self and of the sense of reality; even though several journals have published numerous articles about this disorder, it is not formally recognized in nosographic systems yet [22].

13.5 Dissociative Disorders

Numerous studies have demonstrated the existence of a substantial association between childhood trauma and dissociation [23–26]. Many authors suggested that dissociative symptoms have, in these cases, a specific role of defense: they represent, in fact, a psychic defense mechanism against intolerable traumatic memories, thoughts, and feelings [27].

DSM-5 defines dissociation as a disruption of and/or a discontinuity in the normal integration of consciousness, memory, emotion, perception, body representation, motor control, and behavior. Dissociative symptoms can potentially disrupt every area of psychological functioning [17].

When dissociation occurs during or soon after trauma, the so-called peritraumatic dissociation, this needs to be considered an important risk factor for a subsequent development of PTSD: Ozer and colleagues reported, in a recent metanalysis, that peritraumatic dissociation yielded the largest effect size as a predictor for PTSD in adulthood [14]. What is more, these subjects may develop a pattern of persistent dissociation in response to every potential reminder of the traumatic situation.

The main dissociative symptoms are *depersonalization*, *derealization*, *amnesia*, *identity confusion*, and *identity alteration* (Table 13.1).

Table 13.1 Dissociative symptoms

Depersonalization	The subjective feeling of detachment from one's own body and the feeling of being strange or unreal
Derealization	The feeling of lack of familiarity or the unreality of one's physical and/or interpersonal environment
Amnesia	The inability to remember both personal information and significant periods of time in one's life, which cannot be explained by ordinary forgetfulness or by other medical conditions
Identity confusion	Experience of confusion and conflict over the subject's own personal identity
Identity alteration	The assumption of other identities

DSM-5 distinguishes the following conditions: *dissociative identity disorder*, *dissociative amnesia*, *depersonalization/derealization disorder*, the *otherwise specified dissociative disorder*, and the *unspecified dissociative disorder* [17].

Primary and secondary forms of dissociative disorders can be distinguished; the latter are commonly diagnosed as secondary to other pathologies, such as epilepsy and cranial traumas, or may result from the use of drugs or other substances [1].

13.6 Borderline Personality Disorder

According to literature, *borderline personality disorder* is a particularly common diagnosis among victims of childhood sexual trauma [28]. *Borderline personality disorder* is mainly characterized by a recurring pattern of instability in relationships, continuous efforts to avoid abandonment, identity disturbance, an important level of impulsivity, emotional instability, and chronic feelings of emptiness. Researchers suggested that the etiopathology of borderline personality disorder is based on the combination of a vulnerable genetic background with the occurrence of adverse environmental factors during childhood [1].

Studies reported that prolonged severe trauma, and in particular early trauma, can result in a chronic inability to modulate emotions. In these cases, patients frequently show dysfunctional behaviors often described as self-soothing attempts. Some of these behaviors include clinging and entangling indiscriminate relationships with others in which old traumas can be re-enacted over time, as well as more self-directed behaviors such as self-mutilation, eating disorders, and substance abuse. Suicidal attempts and chronic self-destructive behaviors are relatively common in patients with complicated trauma histories [29–31].

A growing body of literature reports that the occurrence of traumatic and stressful events results in important alterations in the hypothalamic-pituitary-adrenal (HPA) axis, in neurotransmission mechanisms, in the endogenous opioid system regulation, and in neuroplasticity [32, 33].

Interestingly, these are the main biological systems involved also in borderline personality disorder's pathogenesis. Neuroimaging studies widely confirm these data showing volume reductions and μ-opioid receptor increase mainly located in brain regions notably involved in stress responses, cognition, memory, and emotion regulation, such as the hippocampus and the amygdala. Not so many studies are

available on epigenetic changes in patients with borderline personality disorder, although these mechanisms are widely investigated in relation to stress-related disorders [34].

Traumatic childhood experiences are, therefore, capable of determining a damage effect on the developing brain, leading this to permanent alterations.

13.7 Sexual Abuse: General Psychological and Behavioral Consequences

Historical studies raised much interest on the persistent role of past traumatic experiences on people's current lives. Charcot, Janet, and Freud all noted that fragmented memories of traumatic events dominated their patient's mental life; many traumatized people unconsciously expose themselves to situations reminiscent of the original trauma [35]. Freud firstly theorized that the aim of repetition was to gain power and mastery, but clinical experience has shown that this rarely happens; instead, repetition causes further suffering both for the victim and for their relatives [35]. Focusing on behavioral and psychological consequences of trauma, recent studies reported that these outcomes importantly depend on the age of traumatization: child sexual abuse and adulthood sexual violence will therefore have different psychopathological and behavioral effects on the victim.

13.7.1 Childhood Sexual Abuse

Several studies highlighted an important association between child sexual abuse and relational problems: while some survivors report low sexual interest and few close relationships, others display high-risk sexual behaviors such as promiscuity, later engagement in unprotected sexual relationships, multiple sexual partners, and sex trading [36]. These behaviors have been considered, in part, as an unconscious attempt to model some of the behaviors shaped earlier in life by the perpetrator. Moreover, survivors are at greater risk for experiencing depression in adulthood: in one study, the rate of lifetime depression among childhood rape survivors was, in fact, 52% compared to 27% among non-victims [37]. Authors showed an association with an increased risk of suicide even after accounting for the effects of previous psychological problems and after accounting for a twin's history of suicidal behaviors [38]. In a review by Jumper and colleagues published in 1995, later confirmed by Paolucci and colleagues in 2001 and by Klonsky and Moyer in 2008, child sexual abuse results to be significantly related to depression, self-esteem impairment, and other severe psychological problems such as suicidal ideation or behavior, anxiety, and psychotic and dissociative disorders [39–41]. Survivors of childhood sexual trauma have also been shown to be at greater risk of alcohol abuse [42] and eating disorders [43, 44] later in life.

In their review of student samples, Rind and colleagues moreover reported an association between the occurrence of childhood sexual trauma and a substantial interpersonal sensitivity pattern characterized by feelings of inadequacy, inferiority,

or discomfort when interacting with others [45]. What is more, authors highlighted the establishment of a personality pattern importantly characterized by hostility and anger in adults victims of childhood sexual trauma.

Whitaker and colleagues in 2008 reported that sexual offenders against children were highly likely to have a history of childhood sexual abuse in comparison with both individuals who had committed an offense of a nonsexual nature and individuals who had not committed any offense [46]. These data have been widely confirmed: re-enactment of victimization is a major cause of violence and needs to be considered an important risk factor for the perpetration of childhood sexual abuse.

According to literature, criminals have often been physically or sexually abused as children. Lewis and colleagues, in the 1980s, showed that of 14 juveniles condemned to death for murder in the United States in 1987, 12 had been brutally physically abused, and 5 had been sodomized by one of their relatives [47].

13.7.2 Adulthood Sexual Violence

A widely confirmed concept states that women who are victimized in adulthood develop an important vulnerability toward both short- and long-term psychological consequences. Immediate distress may include shock, acute anxiety, confusion, and social withdrawal [48]. Shortly after a violent act has occurred, survivors usually experience *post-traumatic stress disorder* symptoms such as emotional detachment, flashbacks, and insomnia [8]. The majority of survivors experience a reduction in psychological symptoms within the first few months, but in a consistent group of survivors, symptoms can persist for years [49]. Psychological symptoms typically include depression, somatic disorders, body dysmorphic disorders, disordered eating behaviors, sexual dysfunctions, and compulsory body mutilation. Risks of developing mental health disorders as a consequence of sexual trauma are strictly related to assault severity, the occurrence of other negative life events, maladaptive beliefs, and having experienced perceptions of lack of control during trauma.

13.8 Sexual Abuse and Impact on Health

Latthe and colleagues reported an association between child sexual abuse and chronic pelvic pain [50]. In their narrative synthesis of the evidences for sexual transmission of genital herpes in children, Reading and Rannan-Eliya showed in 2007 that while among children assessed for possible, probable, or known sexual abuse, genital herpes was rarely reported, in children presenting to hospitals with genital herpes, sexual transmission occurred in over half the cases. In particular, sexual transmission was reported more commonly in older children, in children presenting with genital lesions alone, and in children who were positive for herper simplex virus type 2 [51].

According to literature, a strong association exists between child sexual abuse and the occurrence of non-epileptic seizures: in a review by Sharpe and Faye, the odds of having a history of child sexual abuse were, in fact, almost three times higher in patients with a diagnosis of non-epileptic seizures [52]. Non-epileptic seizures are an important problem in clinical neurology: their identification is critical to avoid potentially severe consequences that attend errors of either failing to recognize non-epileptic seizures or mistaking true epileptic seizures for non-epileptic ones. According to several authors, the similarity between the typical movements observed in non-epileptic seizures and sexual movements can be explained though Freud's theories: this similarity could exemplify, in fact, the symbolic relationship of the conversion symptom to an underlying conflict. According to Freud, incestuous sexual abuse inevitably associates normal sexual drives to a pattern of negative affectivity pattern including fear, guilt, and shame, and resulting in an unconscious painful conflict between the innate sexual drives and those aversive feelings with which they have become associated [52].

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