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Review article

Traumatic stress, neural self and the spiritual mind



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ABSTRACT

According to recent findings stressful experiences may influence various physiological disturbances and also neuroanatomical changes and some studies also show that psychotherapy and meditation may influence brain functions. Traumatic stress is frequently related to a dissociative response that disintegrates conscious experience. In this context, self-reflection is an essential principle in the process of posttraumatic growth related to spiritual experiences and meditation states that enable mental integration and create the novel integrated self. According to recent findings there is no widely accepted evidence about specific neural mechanisms of processes related to mental integration linked to the spiritual experiences and meditation. Nevertheless there is growing evidence that these integrative experiences are related to various alterations in the brain's physiology and morphology. These findings provide a new paradigm for understanding of mental disorders and emphasize the fundamental role of mental integration and integrated self in the therapy of psychiatric disorders.

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1. Introduction

Recent findings provide growing evidence that child abuse and stress are very important factors in many psychiatric disorders, and that dissociative symptoms related to mental disintegration often occur due to child abuse especially in cases

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of chronic emotional, physical or sexual abuse (Bob, 2011; Bremner, 2006; Teicher, Tomoda, & Andersen, 2006; Teicher et al., 2003). These findings provide a new paradigm for the understanding of mental disorders, which in comparison to the usual hypotheses proposed in the conceptual framework of biological psychiatry, emphasizes the fundamental role of mental experience during development.

In this context, recent evidence indicates that stressful experiences may influence various physiological disturbances and also result in neuroanatomical changes, for example decreased volumes of some brain structures as a consequence of traumatic and stressful experiences (Bob, 2011; Bremner, 2006; Putnam, 1995, 1997; Riklan, Cullinan, & Cooper, 1977; Teicher et al., 2003, 2006). Conversely, various reported studies show that psychotherapy and meditation may also influence brain physiology, and recent findings suggest that certain types of meditation may influence neural regeneration that may lead to increased gray matter or white matter volumes in various brain structures (Hölzel et al., 2008; Lazar et al., 2005; Luders, Toga, Lepore, & Gaser, 2009; Vestergaard-Poulsen et al., 2009; Lazar et al., 2005; Ott, Hölzel, Vaitl, 2011).

This unknown factor in the mind that may influence such profound changes was traditionally linked to “spiritual” qualities of the mind that enable self-discovery, empathy and deeper understanding and appreciation of basic values of life and existence.

2. Traumatic stress, childhood maltreatment and dissociation

According to recent evidence, traumatic stress experiences represent an important etiological factor in the pathogenesis of psychiatric diseases (Bob, 2011; Bremner, 2006; Putnam, 1997; Teicher et al., 2003). Typical psychological manifestations of traumatic stress are related to dissociative responses that disintegrate conscious experience (Bob, 2008; Putnam, 1997; Van der Hart & Friedman, 1989). The most significant traumas originate in childhood, mainly resulting from physical and sexual abuse as well as accidents or natural disasters (Bob, 2008; Putnam, 1989, 1997). Those traumas later manifest in the development of symptoms, often after many years, that are frequently associated with posttraumatic stress disorder (Bob, 2008; Hall & Powell, 2000; Post, Weis, & Smith, 1995; Putnam, 1997).

Characteristic features of disintegration related to these dissociative symptoms are changes in the experience of identity related to various forms of depersonalization or in the most serious cases dissociative identity disorder (Bob, 2008; Hall & Powell, 2000; Putnam, 1989). Other symptoms may represent changes in notions of the external world such as derealization, hallucinations or changes in memory related to psychogenic amnesia and inability to remember the traumatic episodes from the past (Bob, 2008; Briere & Conte, 1989; Chu & Dill, 1990; Coons, Bowman, & Pellow, 1989; Spiegel & Cardena, 1991).

Dissociation may be defined as the partial or total disconnection between memories of the past, awareness of identity and of immediate sensations, and control of bodily movements, often resulting from traumatic experiences, intolerable problems, or disturbed relationships (Bob, 2012; Colman, 2003; Li & Spiegel, 1992). Dissociation represents a special form of consciousness in which events that would ordinarily be connected are divided from one another, or it is also often less generally understood as inability to integrate some psychic contents into the consciousness (Bernstein & Putnam, 1986; Bob, 2008; Li & Spiegel, 1992). Dissociation is defined in the DSM-III-R and DSM-IV as “a disturbance or alteration in the normally integrative functions of identity, memory or consciousness”. New definition according to the DSM-V further describes dissociation as: “unbidden intrusions into awareness and behavior, with accompanying losses of continuity in subjective experience” (American Psychiatric Association, 1987, 1994, 2013). In addition, recent findings indicate that stress and dissociation lead also to various somatoform changes (Bob, 2008; Brown & Trimble, 2000; Kuyk, Spinhoven, Van Emde Boas, & Van Dyck, 1999; Nijenhuis, Spinhoven, Van Dyck, Van Der Hart, & Vanderlinden, 1996).

3. Neurobiological response to stress and dissociation

Dissociation as a reaction to traumatic stress experiences is also related to various neurobiological consequences typically linked to disturbances of self-regulatory systems such as the hypothalamus-pituitaryadrenal axis (HPA), resulting in hyperarousal, tachycardia or other symptoms of autonomic nervous system instability (Read, Perry, Moskowitz, & Connolly, 2001; Teicher et al., 2003). According to neurodevelopmental research the most serious neuroendocrinological and neuroimmune disturbances are caused by traumatic events such as childhood abuse or neglect mainly in the first years of life and often have long-term impact on emotional, behavioral, cognitive, social and physiological functions (Bob, 2008; Ito et al., 1993; Putnam, 1997; Read, Perry, Moskowitz, & Connolly, 2001; Teicher et al., 2003).

These neuroendocrinological and neurophysiological dysfunctions as a consequence of the trauma and dissociation are in accordance with recent and historical findings indicating that somatic components of dissociation also have a profound role in the long-term adaptation to traumatic experiences and lead to a lack of integration of somatoform components of experience, reactions, and functions (the so-called somatoform dissociation) (Bob, 2008; Nijenhuis, 2000). Typical symptoms of somatoform dissociation are alterations in sensation of pain (analgesia, kinesthetic anesthesia), painful symptoms, perception alterations, motor inhibition or loss of motor control, gastrointestinal symptoms and dissociative seizures (Bob, 2008; Brown & Trimble, 2000; Kuyk et al., 1999; Nijenhuis et al., 1996).

Recent studies indicate that close relationship between dissociation and traumatic experiences has also been found in modern studies of depression, schizophrenia and other mental disorders related to stressful memories accompanied by feelings and physical sensations, reliving a traumatic event that represent dissociated states separated from normal mental

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