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Current Opinion in Psychology

Editorial overview: Advances in science and practice in traumatic stress

Anka A Vujanovic and Paula P Schnurr

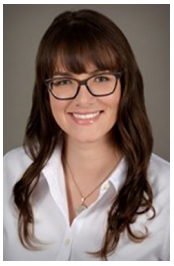
Current Opinion in Psychology 2017, **14**:iv–viii

For a complete overview see the Issue

Available online 9th March 2017

http://dx.doi.org/10.1016/j.copsyc.2017.03.004

Anka A Vujanovic



Trauma and Stress Studies Center, University of Houston, Department of Psychology, 3695 Cullen Boulevard, 126 Heyne Building, Houston, TX 77204, USA
e-mail: aavujano@central.uh.edu

Anka Vujanovic is an Associate Professor and Director of the Trauma and Stress Studies Center in the Department of Psychology at the University of Houston. Her research program is focused upon the investigation of risk and maintenance processes for PTSD; and the examination of biopsychosocial mechanisms underlying the comorbidity of PTSD and substance use disorders. The overarching aim of her work is to inform the development and refinement of evidence-based clinical interventions for PTSD and co-occurring disorders.

Paula P Schnurr

National Center for PTSD, Geisel School of Medicine at Dartmouth, VA Medical Center (116D), 215 North Main St, White River Junction, VT 05009, USA
e-mail: paula.schnurr@dartmouth.edu

This issue provides an expansive overview of the field of posttraumatic stress disorder (PTSD). The featured articles highlight novel, creative, and innovative topics and methodologies, consolidate recent scientific advances, and delineate future directions. The content spans various topics in the field of traumatic stress, including assessment, biopsychosocial correlates, clinical considerations, including comorbidity, anger, self-directed violence, and dissociative manifestations, evidence-based interventions, and innovative delivery formats that maximize dissemination and implementation. The issue's overarching goal is to stimulate creative, multidisciplinary, methodologically rigorous, and theoretically grounded research to advance knowledge and practice in PTSD and related conditions.

Introduction

The understanding of traumatic stress has evolved exponentially over the past 37 years since posttraumatic stress disorder (PTSD) was first introduced as a diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) in 1980 [1]. PTSD has become recognized as a condition of great public health significance, as it is associated with functional impairment [2,3], poor physical health [4], and heightened rates of diagnostic comorbidity [5–7], including substance use disorders [8–10]. Through the years, the diagnosis of PTSD has been reconsidered several times in terms of both the definition of traumatic exposure and the conceptualization of PTSD symptomatology. In the DSM-5 [11], PTSD was reclassified from an anxiety disorder to a trauma- and stressor-related disorder, the stressor criterion (Criterion A) was tightened, avoidance became a separate cluster, and three additional symptoms were added. Currently, PTSD is defined by symptoms of intrusion, avoidance of trauma-related internal or external stimuli, negative alterations in cognitions or mood, and arousal [11]. Subthreshold, or subclinical, PTSD is less well-studied, but it is increasingly understood to be a prevalent clinical syndrome related to various negative outcomes [12–16]. However, the concept of subthreshold PTSD lacks a standardized definition, which is necessary to accurately assess prevalence and associations with clinical outcomes [14].

The vast majority of the general population experiences trauma and a relative minority develops PTSD [17], but higher prevalence is documented among populations chronically exposed to severe trauma, such as military veterans or first responders [18–20]. PTSD may affect children and adults, and the distress encountered in its wake can feel insurmountable to both those affected and their loved ones. Indeed, PTSD often poses a challenge to clinicians and researchers as well due to its phenomenological complexity

Paula P Schnurr is the Executive Director of the National Center for PTSD in the US Department of Veterans Affairs. She also is a Research Professor of Psychiatry at the Geisel School of Medicine at Dartmouth. Her research focuses on treatment of PTSD, quality of life, and the physical health consequences of traumatic exposure.

[21]. However, effective treatments have been developed for PTSD [22–26] and co-occurring disorders [27–30]. Additional endeavors in treatment development and refinement are underway and complemented by great strides in community dissemination and implementation efforts [31–36]. Relatedly, given the immense healthcare utilization and cost associated with PTSD, and possible reductions in cost associated with engagement with evidence-based treatment [37,38], it is imperative that we expand upon our understanding of which treatment works for whom and under what conditions. Although evidence-based interventions have demonstrated efficacy, room remains for facilitating treatment entry and retention and in maximizing benefits for more patients [39–41]. Scientific advances across diverse clinical domains are needed to ultimately inform our best efforts for effective assessment and treatment.

Much attention has been directed at better understanding the role of biopsychosocial factors, including sociodemographic, genetic/epigenetic, as well as structural and functional brain correlates, in conferring risk for PTSD onset and maintenance. Attention also has been directed at identifying prescriptive and prognostic factors influencing treatment outcome and engagement. Perhaps most importantly, there has been an emphasis on bridging our understanding of the cognitive and emotional processes implicated in PTSD etiology, maintenance, and treatment with sociocultural and biological realms of understanding. Yet, questions remain about the predisposing and perpetuating factors relevant to PTSD, the mechanisms underlying effective treatment approaches, and the processes related to its associations with significant clinical and functional features.

Thus, this Traumatic Stress issue of *Current Opinion in Psychology* showcases an expansive overview of the field of PTSD, written by leaders in the respective areas of study. The issue highlights recent, clinically relevant scientific advances. The overarching goal is to stimulate creative, multidisciplinary, methodologically rigorous, and theoretically grounded research to advance knowledge and practice in PTSD and related conditions. Featured topics include: (1) overviews of the strengths and limitations of extant diagnostic and assessment approaches; (2) biopsychosocial risk and maintenance factors related to PTSD, particularly those that can be targeted via pharmacological or psychosocial intervention; (3) intervention approaches, corresponding mechanisms of change, and innovative delivery formats that maximize dissemination and implementation to all segments of the population to minimize disparities in access to and benefit from evidence-based services; and (4) special clinical considerations in PTSD, including sleep disturbance, aggression and anger, self-directed violence, dissociation, and substance use disorders.

Diagnosis and assessment of PTSD

The foundation for scientific and clinical progress is psychometrically-sound measurement. To advance our understanding of etiological processes and improve intervention efforts, we first need to be able to assess PTSD accurately. Most assessment modalities require that clinicians and researchers rely on individuals' self-reports of symptoms. Thus, our assessment measures need to be standardized, while flexible enough to accommodate for individual experience. In this issue, Weathers reviews the changes to the PTSD diagnostic criteria in DSM-5, highlighting guiding principles for the diagnostic revision process and issues of contention. He also discusses psychometric evaluations of selected questionnaire and interview measures of PTSD based on DSM-5 criteria. In a complementary article, Jovanovic et al. review laboratory-based assessment approaches for PTSD, including

indices such as psychophysiological reactivity and hypothalamic-pituitary-adrenal axis functioning, and propose future directions for laboratory-based assessment of PTSD.

Risk and maintenance factors related to PTSD

Understanding acute stress reactions following traumatic exposure is important for determining risk and resilience processes in PTSD. Bryant discusses associations of acute stress reactions with PTSD and describes recent changes in the acute stress disorder (ASD) diagnosis. He also reviews the ASD epidemiological and treatment literature.

PTSD and its varied manifestations naturally occur in a complex environment influenced by various sociocultural factors and stages of individual development. Therefore, our understanding of PTSD must consider the impact of gender, ethnocultural and race differences, psychosocial interplay, and lifespan development. Pineles et al. review the literature on gender differences in emotional, cognitive, and neurobiological factors and their associations with PTSD and related disorders. In a complementary article, Asnaani and Hall-Clark review recent research on ethnocultural and race differences in trauma exposure and PTSD and underscore steps necessary to improve our understanding of the role of culture in PTSD. Vogt et al. discuss the conceptual and methodological challenges to studying the role of social context preceding, during, and following traumatic events in conferring risk for PTSD.

As developmental pathways to risk and resilience may differ across age groups, stages of life are relevant to our understanding of PTSD. McLaughlin and Lambert summarize the mechanisms relevant to risk and resilience among children in the aftermath of trauma, namely threat processing (*e.g.*, social information processing biases, altered emotional learning, emotion regulation difficulties) and several protective factors (*i.e.*, caregiver support, sensitivity to reward, prefrontal-amygdala circuitry). Highlighting the other older age spectrum, Cook and Simiola review recent developments in our understanding of PTSD in older adults and discuss prevalence, course, and clinical considerations for treatment of older adults with PTSD.

Equally as important to our understanding of PTSD as the sociocultural and developmental context is the associated biological context. Sheerin et al. provide a comprehensive overview of genetics and epigenetics in PTSD. Olff and van Zuiden review the most well-studied endocrine and immune markers relevant to PTSD. Lanius et al. review the PTSD-related literature on altered threat-related neurocircuitry, emphasizing associations between Innate Alarm System brain regions and subconscious threat processing.

A discussion of PTSD would not be complete without an emphasis on the role of cognition and emotion in shaping response to traumatic life events. LoSavio et al. review the literature on cognition as well as the utility of implicating cognitive targets in treatment. McLean and Foa discuss emotion and emotion regulation, with a particular focus on the PTSD-relevant literature on shame and guilt, anger, disgust, and emotion regulation difficulties. Gallagher provides an overview of several transdiagnostic factors, including hope, neuroticism, emotion regulation, cognition, and anxiety sensitivity, and discusses treatment implications for populations with PTSD and co-occurring disorders.

Treatments for PTSD

Indeed, our understanding of biopsychosocial processes has directly informed the development of treatments for PTSD. Schnurr provides a comprehensive, brief review of the literature on trauma-focused psychotherapy, while Bernardy and Friedman discuss the literature on pharmacotherapies for PTSD and related conditions, highlighting promising developments and directions. Although trauma-focused psychotherapy and pharmacotherapy are among the more well-established, first-line interventions for PTSD, there is interest in alternative medications and psychotherapies. For example, Lang reviews the growing field of mindfulness- and acceptance-based interventions for PTSD. Loflin et al. discuss the experimental, preclinical, and clinical evidence for the use of cannabinoids for the treatment of PTSD, with a focus on several potential symptom targets including fear-memory, anxiety, depressed mood, and sleep disturbance.

Despite the existence of effective treatments for PTSD, many individuals are not able to obtain these treatments. To address this challenge, investigators have explored strategies for enhancing access to evidence-based care. Morland et al. review the literature on telehealth and eHealth interventions for PTSD, as stand-alone or adjunctive platforms for delivering both information and treatment to trauma survivors. In a complementary review, Chen et al. review effectiveness trials and implementation studies from a global health perspective in order to discuss the effective international dissemination and implementation of trauma-focused treatments.

Clinical correlates of PTSD

Several papers in this issue examine clinical correlates of PTSD that have significant relevance to treatment efforts, including sleep disturbance, aggression and anger, self-directed violence, dissociation, and substance use disorders. Germain et al. summarize a conceptual model that underscores the role of sleep disturbance in PTSD and review behavioral and pharmacological sleep treatments that may augment PTSD treatment outcomes. Taft et al. review the literature on aggression and anger, outlining promising treatment avenues and targets. Bryan

et al. broach the important topic of self-directed violence, discussing theoretical and empirical avenues for better understanding this clinically significant issue. Dutra and Wolf consider the literature on the dissociative subtype of PTSD and review the evidence and corresponding treatment approaches for two models of PTSD-related dissociative symptoms. Vujanovic et al. integrate the literature on reward functioning in PTSD and substance use disorders in order to inform treatment refinement and development for this highly prevalent, complex comorbidity.

Conclusions

The articles included in this issue show that human functioning in the aftermath of trauma manifests in a unique and complex context. Why some individuals cope effectively following a traumatic experience and others respond with acute or prolonged stress remains a key question. The field has made significant strides in identifying various biopsychosocial factors implicated in risk and resilience, paving the way for more intensive scientific inquiry. How the stress manifests – cognitively, emotionally, and behaviorally – and the corresponding implications for treatment are areas where we have seen outstanding leaps in scientific development to inform and disseminate evidence-based clinical practice.

The field of traumatic stress studies is moving toward the development of personalized medicine approaches to trauma-informed care, wherein biopsychosocial case conceptualizations guide personalized trauma recovery plans. The articles in this issue point to a promising future in which we approach assessment, prevention, and treatment from an integrated, translational viewpoint, using our scientific advances to more effectively identify and treat the consequences of exposure to traumatic events.

Conflict of interest statement

Nothing declared.

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