International Journal of Emergency Mental Health and Human Resilience, Vol. 17, No.3, pp. 661-663, ISSN 1522-4821

Conceptualization of PTSD from the Vietnam War to Current Conflicts and Beyond

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The definition of post-traumatic stress disorder (PTSD) underwent substantial changes in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), including the inclusion of negative affective experiences that were underrepresented in prior conceptualizations, among other changes (American Psychiatric Association, 2013). How these changes will impact prevalence and whether the clinical usefulness of this disorder has been improved are still unknown. Recently, Hoge and his associates undertook such a comparison study among US combat veterans (Hoge et al., 2014). Their study showed that the new PTSD symptom criteria did not seem to have greater clinical utility and a high percentage of those who met criteria by one definition did not meet criteria by the other definition. Hoge and his colleagues noted that clinicians might need to consider how to manage discordant PTSD outcomes, particularly for those with PTSD who no longer meet criteria under DSM-5 (Hoge et al., 2014). Another recent study included a 40 year follow-up of veterans of the Vietnam War (Marmar et al., 2015). Originally assessed in the late 1980s (Kulka et al., 1990), this veteran cohort was found to have lower rates of current PTSD than reported previously, typically 10% or less. This prevalence rate was also recently reported for community-based veterans seen in non-Veterans Affairs (VA) hospitals, based on the DSM-IV criteria (Boscarino, Hoffman, Pitcavage, & Urosevich, 2015a). The latter study is noteworthy because the majority of US veterans today have private health insurance and/or Medicare coverage and receive some or all their care from non-VA institutions (Elbogen et al., 2013; US Department of Veterans Affairs, 2010). Veterans who receive their care at VA hospitals appear to be more impaired (Boscarino et al., 2015a). Thus, studying veterans in VA hospitals alone will tend to distort the true clinical picture. Broader, population-based studies are needed.

Earlier community-based studies of Vietnam veterans suggested high rates of PTSD and other mental conditions among these former service members (Boscarino, 2007; Kulka et al., 1990). While subsequent studies suggested that these estimates might have been too high, a significant proportion of these veterans, perhaps as high as 15%, appear to be impaired by combat-related trauma (Dohrenwend et al., 2006). Similarly, initial research related to service in Afghanistan and Iraq suggested that significant numbers of military personnel developed mental health disorders following their deployments (Hoge et al., 2004). Generally, current research suggests that the prevalence of DSM-IV PTSD may be as high as 15% among recent service members (Booth-Kewley et al., 2010), although some estimates have been lower (Kok, Herrell, Thomas, & Hoge, 2012). While the reported prevalence of PTSD and related disorders among deployed veterans has varied depending on the assessment method and service era studied, it generally has been reported to be about 10-15% (Dohrenwend et al., 2006; LeardMann et al., 2009) – sufficiently prevalent to be of public health concern (Spelman, Hunt, Seal, & Burgo-Black, 2012). However, the impact of the DSM-5 criteria on prevalence and the clinical usefulness of this disorder remains to be fully assessed. Ultimately, the success of the DSM-5 classification for most disorders will necessarily depend on the psychobiological bases of these criteria and how well these new criteria reflect the biological nature of these syndromes (Boscarino, Hoffman, & Han, 2015b).

In the past, PTSD research was guided by a "psychosocial-stressor" model used in previous studies (Boscarino, 1995; Boscarino et al., 2014; Hobfoll & Lerman, 1988). This model suggests that the availability of psychosocial resources and risk factors in the pre- and post-trauma periods affect reactions to environmental stressors and, thus, the onset of health problems and/or initiation of treatment-seeking in the post-trauma period (Adams, Boscarino, & Galea, 2006; Yamashita, 2012). This psychosocial-stressor model guided past study designs, instrument selections, and data analyses (Boscarino, Adams & Figley, 2004; Rosen et al., 2012). This model has utility in health research conducted among trauma-exposed populations, because it facilitates investigational strategies based on a psychosocial knowledge base in behavioral sciences (Adams et al., 2006; Boscarino, Hoffman, Pitcavage & Urosevich, 2015a; Boscarino et al., 2014; Yamashita, 2012). However, as previously noted (Boscarino & Figley, 2012), it became apparent in the late 1980s that PTSD had psychobiological components that played a major role in the onset and course of this disorder (Boscarino, 2012; Boscarino, 2008; Boscarino, Erlich, Hoffman, & Zhang, 2012).

Understanding the psychobiology of PTSD is complex for at least several reasons, including the fact that our knowledge of the key phenotypes, endophenotypes, and genotypes associated with mental illness are limited at this time (Boscarino, 2012; Boscarino & Figley, 2012; Boscarino et al., 2012). In addition, the biological risk factors for PTSD, as well as for many mental disorders, often interact with environmental and psychosocial variables, which may suppress or accelerate the onset of mental disorders. For these reasons, contemporary medical genetic methods, such as genome-wide association studies (GWAS) have been limited (Boscarino, 2012). Mental health phenotypes are still evolving, as witnessed by the recent publication of DSM-5 (American Psychiatric Association, 2013). Post-traumatic stress disorder, as well documented, emerged as a legitimate area of clinical and scientific interest only as recently as the late 1970s (Figley, 1978). This was due less to clinical science and more to the advocacy of Vietnam veterans and the "social justice" movements at the time (Figley, 1978; Figley & Boscarino, 2012). With the advent of DSM-5 nomenclature, one would hope that the psychobiology of PTSD would be further advanced with new studies of those exposed to traumatic events, whether due to natural disasters or manmade ones, such as armed conflicts or technological calamities. While animal studies are important in biological research, generally large-scale prospective cohort studies with human subjects are typically required to understand complex disease outcomes (Hulley et al., 2013). The unique thing about PTSD, of course, is that there is typically a defined underlying causal event (American Psychiatric Association, 2013), unlike most areas of medical research.

As previously noted (Boscarino, 2007), the study of PTSD did not advance significantly until large-scale prospective cohort studies

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were undertaken in the 1980s using standardized psychometric instruments. We do not expect this epidemiologic research paradigm to change drastically in the near future (American Psychiatric Association, 2013). Nevertheless, one development related to PTSD nosology is the Research Domain Criteria (RDoC) initiative. This approach aims to depict dimensional constructs underlying mental function across multiple constructs to understand the psychopathology of mental disorders (Sumner, Powers, Jovanovic & Koenen, 2015). Examination of the genetic contributions of acute threat reactions related to neural circuits and mammalian physiology seems promising for future PTSD investigations (Sumner et al., 2015). In the past, genetic studies of the neural circuitry and physiology of acute threat reactions have typically used candidate gene methods, but these techniques have had only limited success. Thus, genome-wide approaches using large-scale samples and employing RDoC are currently being pursued. How successful these new efforts will be, however, still remains to be seen.

ACKNOWLEDGEMENT

Support for this work was provided in part by the Geisinger Auxiliary Fund, the Kline & Ditty Health Fund, the National Institute of Mental Health (Grants # R01-MH-066403 & R21-MH-086317), US Department of Defense (Grant # W81XWH-15-1-0506), and a donation from the Wounded Warrior Project to Dr. Joseph A. Boscarino.

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