FOCUS: PSYCHIATRY AND PSYCHOLOGY

Introduction

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The fields of psychiatry and psychology overlap in numerous ways with the overarching goal of advancing our knowledge and treatment of mental illnesses. While psychologists focus largely on the study of how dysregulation of mental processes and behaviors lead to pathology, it is the objective of the psychiatrist to medically treat these disorders. Together these disciplines aim to better understand all aspects of the human mind that relate to cognitive processing, behavior modulation, and social interactions as well as the underlying neurobiological mechanisms by which these processes might be modified. It is the focus of the current issue of the Yale Journal of Biology and Medicine to examine diseases and alterations of the human psyche through both basic research as well as clinical perspective.

The brain displays remarkable resilience to a variety of potentially damaging stimuli. One extraordinary example of this is the way the brain responds to stress by activating the hypothalamic-pituitary-adrenal (HPA†) axis, which then serves as feedback inhibition over the system. Under conditions of chronic stress, however, this sophisticated and effective regulatory system can be disrupted, resulting in adverse outcomes and long-lasting pathology. In her review, Boyle discusses one mechanism by which this might take place. She proposes a neuroplasticity hypothesis in the basolateral amygdala, a region of the brain known to be critical for fear memory consolidation and processing emotional responses, as well as serving to regulate the stress response. This review proposes a model whereby chronic exposure to glucocorticoids leads to an enhancement in glutamatergic signaling and dendritic hypertrophy in the amygdala, which ultimately leads to dysregulation of functional and behavioral outcomes.

While chronic stress involves multiple systems as well as numerous brain regions, more classic psychological disorders are presented in the current issue as well. Of the range of topics represented here, major depressive disorder may be the most prevalent and debilitating disorder in our society today. Rechenberg and Humphries explore the impact of perinatal depression on children born to affected mothers. This represents a unique clinical population, as most currently prescribed pharmacological agents are not recommended for use during pregnancy. The authors go on to examine

†Abbreviations: HPA, hypothalamic-pituitary-adrenal.

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nutritional influences on depression during this time, suggesting the use of nutritional supplements as a safe and potentially useful therapeutic tool for this population.

Also relating to the topic of depression, Barkil-Oteo offers a clinical perspective on current psychiatric practices and treatment. Here, he advocates for a more collaborative-based approach to treat depression, which includes the utilization of measurement-based outcomes as these therapeutic methods have been shown to be more effective than treatment provided by primary care physicians alone.

Enhancing our current understanding of the way our brains process sensory information is also critical for effective management and treatment of mental illnesses. Autism is yet another disorder with an ever increasing incidence in the population today. Kumar reviews the specific characteristics of how visuospatial information is processed in autistic individuals. This manuscript explores the interplay between altered processing mechanisms, social interactions, and other higher cognitive functions. Additionally, original research by Kern et al. examines possible intervention strategies for treating autistic children. Using the Play-Wisely system, which is thought to stimulate regions of the brain involved in spatial recognition, attention span, motor skills, and coordination, among others, the group demonstrates that children using this system show a reversal of autistic symptoms in a clinical population under 3 years of age.

The abovementioned disorders represent only a small subset of those that fall under the realm of psychiatry and psychology. The human mind is a complex and multifaceted network that allows us to perceive the world around us, form judgments, integrate and process a wide variety of stimuli, and ultimately formulate the appropriate behavioral responses. The disciplines of psychiatry and psychology strive to further understand how the brain discerns and processes such information with the hopes of providing effective and reliable treatment options when things go wrong along the way.