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Editorial

The Potential of Mind-Body Medicine for the Prevention and Treatment of Stress and Trauma

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The significance of psychological and behavioral factors on health becomes particularly pronounced during vulnerable life stages such as childhood and old age (Dinan & Cryan, 2017), as well as in challenging circumstances (Dhabhar, 2014), ranging from extreme conditions such as space travel to traumatic events. Chronic stress, as highlighted in several studies (e.g., Bottaccioli et al., 2019; Nagaraja et al., 2016), is a paramount contributor to health outcomes. Both Mind-Body Medicine (MBM) and stress research draw a clear distinction between the impacts of chronic stress and acute, yet moderate, stress on health (Dhabhar, 2014). Even in situations perceived positively, the dosage and duration of stress are crucial, as prolonged stress, even when viewed positively, can pose health risks (Dhabhar, 2014). Understanding the intricate mechanisms by which stress and trauma affect health is a pivotal goal, and basic research in MBM seeks to unravel these complex relationships (Seifert et al., 2020).

Various MBM interventions, including mindfulness, compassion, yoga, and meditation practices, show potential for reducing stress during or after stressful periods (Black & Slavich, 2016; Kuo, 2015; Pace et al., 2009). Psychological processes, along with psychological and behavioral interventions, have been extensively studied for their influence on the immune system (Black & Slavich, 2016; Bottaccioli et al., 2019; Cruces et al., 2014; Falkenberg et al., 2018), positive

psychological well-being (Boehm & Kubzansky, 2012), physiological functions (Gallegos et al., 2017; Pascoe et al., 2017), and the mind's impact on chronic diseases (Caes et al., 2017).

Notably, MBM therapies such as meditation have demonstrated a positive impact on inflammatory activity and virus-specific immune responses (Morgan et al., 2014). Of particular interest is the possibility of improved antibody response through meditation in individuals experiencing chronic stress, immunocompromised individuals, and older adults (Seifert et al., 2020). Studies that directly measure antibodies reveal intriguing findings, including mindfulness-based stress reduction (MBSR) resulting in significant increases in hemagglutination-inhibition influenza antibody titers (Hayney et al., 2014).

The literature on meditation as a stress-reduction method presents promising applications during or after stressful events (Gallegos et al., 2017; Pascoe et al., 2017). A randomized study indicates that MBSR may serve as a novel treatment approach to reduce social risk factors such as loneliness, along with molecular pro-inflammatory gene expression in older adults (Creswell et al., 2012). Meditation in general holds potential for reducing inflammation, including gene expression, cellular health, and chromosomal health (Esch et al., 2018), demonstrating self-regulatory and self-healing capabilities within the inherent

restorative capabilities of the mind and body (Esch, 2020).

Additionally, other MBM interventions, such as yoga, demonstrate beneficial effects by enhancing immune function (Falkenberg et al., 2018) and mitigating stress-related risk factors, including hypertension, obesity, and cardiovascular risk factors (Cramer, Haller, et al., 2014; Cramer, Lauche, et al., 2014; Lauche et al., 2016). Both yoga and meditation, examined from the perspective of Traditional Indian Medicine, are emerging as potentially effective tools in the context of the current pandemic due to their global popularity (Bushell et al., 2020; Payyappallimana et al., 2020; Tillu et al., 2020).

Qigong, supported by a growing body of scientific evidence (Guo et al., 2019; Zou et al., 2019), has been shown to be effective in improving cardiovascular risk factors in participants with metabolic syndrome according to a meta-analysis (Zou et al., 2019). Comprehensive MBM trainings, encompassing

relaxation, nutritional counseling, and exercise within a multimodal group program (e.g. as described in Esch & Stefano, 2022), positively influence cardiovascular risk factors such as atherosclerosis and systolic blood pressure (Cramer et al., 2015). Some multimodal interventions include spiritual components aimed at enhancing connectedness with oneself, others, nature, or a higher power. Wondering Awe, for instance, has been identified as a crucial resource for psychological well-being during the COVID-19 pandemic (Büssing et al., 2023).

Collectively, MBM offers a range of easily implementable, evidence-based preventive and therapeutic options for stress-related diseases and for enhancing physical and mental resilience, with potential implications for the prevention and treatment of stress and trauma. However, further basic and clinical research, including methodologically rigorous studies, is imperative. Continuous updates to reviews are essential to provide a well-balanced perspective on the evolving data landscape.

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