THE MIND Bulletin on Mind-Body Medicine Research

Mind-Body Medicine Research Council

Research

The BERN Framework of Mind-Body Medicine

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In the University Outpatient Clinic for Integrative Health Care and Naturopathy at Witten/Herdecke University, which emerged from the Institute for Integrative Health Care and Health Promotion (IGVF), the so-called BERN program has been taught to patients since 2019. The BERN concept, a health promotion program is based on the concept of Mind-Body Medicine (MBM), which was developed at Harvard Medical School in Boston. MBM focuses on enhancing our understanding of how the interactions between the brain, mind, body, and behavior can be utilized to improve health and well-being (Esch, 2020).

The evidence base of the BERN program has recently been published by Tobias Esch and George Stefano in an article in Frontiers in Integrative Neuroscience (Esch & Stefano, 2022). In this narrative review, the fundamental principles of MBM are outlined and a logical framework for implementing interventions based on MBM are introduced. Additionally, the impact of MBM on the brain's motivation and reward systems is explored, including potential involvement of mitochondria.

MBM can effectively enhance the health of individuals with chronic diseases, particularly those linked to lifestyle factors. It builds upon the concept of salutogenesis, which concentrates on determinants of health rather than disease and emphasizes the development of individual resilience and coherence factors to reduce stress, alleviate disease burden, and enhance quality of life. This approach incorporates well-known principles of self-healing and self-care. MBM interventions typically combine techniques for behavioral modification with cognitive strategies targeting stress regulation, exercise, relaxation, meditation, and nutrition. The acronym "BERN" (Behavior, Exercise, Relaxation, and Nutrition) is proposed as a summary of the operational framework for this approach. Various BERN techniques exert their effects through shared autoregulatory circuits in the central nervous system (CNS) responsible for reward and motivation. These circuits rely on multiple neurobiological signaling pathways that involve common effector molecules, such as nitric oxide (NO). NO plays a critical role in reward physiology, stress reduction, and self-regulation by influencing various processes within brain cells, including those involving mitochondria, nuclei, and chromosomes. Furthermore, NO has been implicated in relevant outcomes, such as the placebo response.

In summary, MBM interventions typically follow the BERN model, aiming to enhance health, build resilience, and alleviate stress. The mechanisms underlying these processes involve the CNS reward systems and are associated with placebo and self-healing pathways.

References

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