

The Effect of Mindfulness Yin Yoga on Autonomic Regulation and Perceived Stress Symptoms Among Nurses: A Randomized Controlled Trial

Hui-Chih Chang *

Mind-Body Interface Research Center, China Medical University Hospital, Taichung, Taiwan

Ikbai Andrian Malau

Mind-Body Interface Research Center, China Medical University Hospital, Taichung, Taiwan

Chao-Hsiun Tang

Mind-Body Interface Research Center, China Medical University Hospital, Taichung, Taiwan

Nai-Ling Chen

Mind-Body Interface Research Center, China Medical University Hospital, Taichung, Taiwan

Michelle Chu

Mind-Body Interface Research Center, China Medical University Hospital, Taichung, Taiwan

Kuan-Pin Su

Mind-Body Interface Research Center, China Medical University Hospital, Taichung, Taiwan

Abstract

Objectives: This study is the first to utilize both objective physiological markers and subjective psychometric measures to investigate the efficacy of a Mindfulness Yin Yoga (MYY) intervention in alleviating stress among nursing professionals.

Methods: Sixty-six nurses from a medical center in New Taipei County with a Perceived Stress Scale (PSS) score > 8 were recruited and randomly assigned to either an 8-week MYY intervention group (n=33) or a waitlist control group (n=33). Primary outcomes included Heart Rate Variability (HRV) parameters to assess autonomic function. Secondary outcomes included the Beck Anxiety Inventory (BAI) and the 12-item Short Form Health Survey (SF-12). Statistical analyses were performed using ANCOVA following an Intent-to-Treat (ITT) approach, with Last Observation Carried Forward (LOCF) for missing data imputation.

Results: The MYY group demonstrated significantly greater improvements compared to the control group across multiple HRV indices, including mean heart rate ($p < 0.0001$), Total Power ($p = 0.0003$), Low Frequency ($p = 0.0001$), and High Frequency ($p = 0.0002$) power, though no significant difference was observed for the LF/HF ratio ($p = 0.39$). Furthermore, the MYY group showed significant reductions in anxiety (BAI, $p = 0.032$) and improved quality of life, specifically within the Physical Component Summary (PCS) of the SF-12 ($p < 0.01$).

Conclusion: An 8-week MYY intervention effectively enhances autonomic nervous system regulation and alleviates physical and psychological distress in stressed nurses. These findings suggest that MYY is a viable, evidence-based intervention for promoting occupational health and psychological resilience within the healthcare workforce.

Keywords

Mindfulness, yoga, nurses, stress, autonomic.