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The Effect of a Mindfulness Application on the Perceived Stress and Anxiety of Nurse Anesthesia Students

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Abstract : Introduction: Nurse anesthesia education places high demands on students, creating stress and anxiety that can impact their success. Framed in Watson's caring theory, the research question posed for this study was: What is the effect of a mindfulness application on the perceived stress and anxiety of nurse anesthesia students. Methods: A quantitative comparative research design was used to determine the effect of a mindfulness meditation application, Mindshift, on SRNA's perceived stress and anxiety over time. The stress and anxiety subscales of the Depression Anxiety Stress Scale 21 (DASS-21) were used to measure the effectiveness of the intervention. After the IRB approval was obtained the 2024, 2025, and 2026 SRNA cohorts were invited to participate in the study (N = 56). Thirty-six students agreed to participate, completed the electronic informed consent, and the electronic DASS-21 baseline measure (64.3%). The Mindshift app was downloaded from the app store onto their personal device and the mindfulness meditation exercises were integrated into their daily routine. The stress and anxiety subscale of the DASS-21 was repeated at 1-month, 3-months, and 6-months, with 31 students completing all measures (86.1%). The difference over time was computed using a repeated measures ANCOVA. Results: Instrument reliability and validity was reconfirmed (Stress: $\alpha = .890$; Anxiety: $\alpha = .788$; $\chi 2 = 232.898$, $p < .001$). There was no difference in the student's stress over time ($F = 2.62$, $p = .079$, $\eta 2 = .086$). When the intervention was considered stress decreased at the 3- month ($F = 4.497$, $p = .014$, $\eta 2$ .138) and 6-month ($F = 7.998$, $p < .001$, $\eta 2 = .222$) intervals. Post-hoc analysis revealed no change between baseline and 1-month ($p = .245$) but improved from 1-month to 3-months ($p = .014$), 1-month to 6-months ($p < .001$), and 3-months to 6-months ($p = .007$). There was no difference in the student's anxiety over time ($F = .326$, $p = .683$, $\eta 2 = .011$) or at the three-month interval ($F = .647$, $p = .488$, $\eta 2$ .024), but anxiety decreased at the six-month interval ($F = 4.686$, $p = .004$, $\eta 2 = .143$). Post-hoc analysis revealed no change between baseline and 1-month ($p = .261$) or 1-month to 3-months ($p = .132$). However the student's anxiety significantly improved from 1-month to 6-months ($p < .001$), and 3-months to 6-month ($p = .014$). Discussion: The mindfulness intervention reduced perceived stress and anxiety levels over time. The gradual decline in stress and the delayed improvement in anxiety suggest that continuous interventions are needed to achieve positive results. It is recommended that mindfulness meditation techniques are integrated into the curriculum highlighting the importance of longitudinal interventions.

Keywords : nurse anesthesia, nursing education, innovation in education, stress, anxiety
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