

Effects of Newly-Developed Superimposed Binaural Beat on Anxiety in University Students in Thailand: A Randomised Controlled Trial

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ABSTRACT

This study aimed to investigate the effects of superimposed binaural beat in reducing anxiety among university students and to compare the effects of superimposed binaural beat to those of receptive music listening and relaxation treatment. The 134 participants who participated in the double-blind randomised controlled trial were randomly selected from 539 students with anxiety. According to block randomisation, the participants were assigned to superimposed binaural beat (n = 45), receptive music listening (n = 45), and blank audio (Control, n = 44) groups. All three groups received general relaxation treatment in 20-minute daily sessions over a period of 5 consecutive days. The median differences in anxiety level were measured by the self-administered State-Trait Anxiety Inventory form-Y before and after treatment for the superimposed binaural beat, music listening, and control groups at -20.00, -16.00, and -15.00, respectively. The differences between the superimposed binaural beat group and the control (P = 0.04) and music listening (P = 0.02) groups were statistically significant. Anxiety levels were effectively reduced in 100% of participants in the superimposed binaural beat group, which was higher than the rate in the control group (84.09%; P < 0.01). Superimposed binaural beat-based interventions may reduce anxiety in university students more effectively than the music listening and general relaxation methods. The research findings are potentially beneficial for policymakers and for developing interventions aimed at reducing anxiety in university students.

Keywords: Anxiety, Student, Music listening, Superimposed binaural beat, Relaxation, Randomised controlled trial, Effect