

Enhanced Physiological Response of Blood Pressure and Improved Performance in Successive Divided Attention Test Seen with Classical Instrumental Background Music Compared to Controls

Authors : Shantala Herlekar

Abstract : Introduction: Entrainment effect of music on cardiovascular parameters is well established. Music is being used in the background by medical students while studying. However, does it really help them relax faster and concentrate better? Objectives: This study was done to compare the effects of classical instrumental background music versus no music on blood pressure response over time and on successively performed divided attention test in Indian and Malaysian 1st-year medical students. Method: 60 Indian and 60 Malaysian first year medical students, with an equal number of girls and boys were randomized into two groups i.e music group and control group thus creating four subgroups. Three different forms of Symbol Digit Modality Test (to test concentration ability) were used as a pre-test, during music/control session and post-test. It was assessed using total, correct and error score. Simultaneously, multiple Blood Pressure recordings were taken as pre-test, during 1, 5, 15, 25 minutes during music/control (+SDMT) and post-test. The music group performed the test with classical instrumental background music while the control group performed it in silence. Results were analyzed using students paired t test. p value < 0.05 was taken as statistically significant. A drop in BP recording was indicative of relaxed state and a rise in BP with task performance was indicative of increased arousal. Results: In Symbol Digit Modality Test (SDMT) test, Music group showed significant better results for correct (p = 0.02) and total (p = 0.029) scores during post-test while errors reduced (p = 0.002). Indian music group showed decline in post-test error scores (p = 0.002). Malaysian music group performed significantly better in all categories. Blood pressure response was similar in music and control group with following variations, a drop in BP at 5minutes, being significant in music group (p < 0.001), a steep rise in values till 15minutes (corresponding to SDMT test) also being significant only in music group (p < 0.001) and the Systolic BP readings in controls during post-test were at lower levels compared to music group. On comparing the subgroups, not much difference was noticed in recordings of Indian student's subgroups while all the paired-t test values in the Malaysian music group were significant. Conclusion: These recordings indicate an increased relaxed state with classical instrumental music and an increased arousal while performing a concentration task. Music used in our study was beneficial to students irrespective of their nationality and preference of music type. It can act as an "active coping" strategy and alleviate stress within a very short period of time, in our study within a span of 5minutes. When used in the background, during task performance, can increase arousal which helps the students perform better. Implications: Music can be used between lectures for a short time to relax the students and help them concentrate better for the subsequent classes, especially for late afternoon sessions.

Keywords : blood pressure, classical instrumental background music, ethnicity, symbol digit modality test

Conference Title : ICP 2018 : International Conference on Physiology

Conference Location : Kuala Lumpur, Malaysia

Conference Dates : December 05-06, 2018