

Moved by Music: The Impact of Music on Fatigue, Arousal and Motivation During Conditioning for High to Elite Level Female Artistic Gymnasts

Authors : Chante J. De Klerk

Abstract : The potential of music to facilitate superior performance during high to elite level gymnastics conditioning instigated this research. A team of seven gymnasts completed a fixed conditioning programme eight times, alternating the two variable conditions. Four sessions of each condition were conducted: without music (session 1), with music (session 2), without music (3), with music (4), without music (5), and so forth. Quantitative data were collected in both conditions through physiological monitoring of the gymnasts, and administration of the Situational Motivation Scale (SIMS). Statistical analysis of the physiological data made it possible to quantify the presence as well as the magnitude of the musical intervention's impact on various aspects of the gymnasts' physiological functioning during conditioning. The SIMS questionnaire results were used to evaluate if their motivation towards conditioning was altered by the intervention. Thematic analysis of qualitative data collected through semi-structured interviews revealed themes reflecting the gymnasts' sentiments towards the data collection process. Gymnast-specific descriptions and experiences of the team as a whole were integrated with the quantitative data to facilitate greater dimension in establishing the impact of the intervention. The results showed positive physiological, motivational, and emotional effects. In the presence of music, superior sympathetic nervous activation, and energy efficiency, with more economic breathing, dominated the physiological data. Fatigue and arousal levels (emotional and physiological) were also conducive to improved conditioning outcomes compared to conventional conditioning (without music). Greater levels of positive affect and motivation emerged in analysis of both the SIMS and interview data sets. Overall, the intervention was found to promote psychophysiological coherence during the physical activity. In conclusion, a strategically constructed musical intervention, designed to accompany a gymnastics conditioning session for high to elite level gymnasts, has ergogenic potential.

Keywords : arousal, fatigue, gymnastics conditioning, motivation, musical intervention, psychophysiological coherence

Conference Title : ICPEMS 2020 : International Conference on Psychophysical Effects of Music in Sport

Conference Location : Sydney, Australia

Conference Dates : May 18-19, 2020