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The Interplay Between Musical Training and Working Memory Performance

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Background & Hypothesis:

Musical training has been shown to enhance cognitive domains in a wide variety of areas such as IQ, verbal, attention span and visuospatial abilities. Research suggest that the working memory might play a role in mediating the cognitive benefits seen in musicians. Thus, the present study aimed to investigate the cognitive benefits of musicians and non-musicians using the framework of Baddeley's (2000) working memory model.

Methods:

Sixty-nine participants from James Cook University (Singapore) were recruited through convenience sampling. Participants completed a demographic questionnaire and an Advanced Measures of Music Audiation test (Gordon, 1989) to confirm the self-reported data of musicians. Then, participants completed 6 experimental tasks designed to measure the different aspects of working memory: verbal memory, visuospatial memory, and attentional capacity. The study was approved by the human research ethics committee.

Results:

The results revealed musicians outperformed non-musicians only in 2 working memory tasks, which involved visual-motor coordination, visual perceptual speed, sequencing skills, rote learning, and spatial and motion memory. No benefits were found regarding verbal memory.

Discussion & Conclusion:

This study provides evidence that musical training produces positive effects related to specific aspects of visuospatial memory and attentional capacity. According to Cheong et al (2013), persons with early cognitive impairment face risk of diminished mental capacity. This study opens doors to new research on if musical training could help promote cognitive functioning in those with early cognitive impairment. This will help to promote patients' reintegration into community living (Saifudin, Eu, & Hendriks, 2013).