

# Can Music Enhance Attention and Concentration in Undergraduate Clinical Learners? A Narrative Review

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## INTRODUCTION

Studies of background music across higher education show it can influence performance.<sup>1-2</sup> Attention and concentration are related but distinct processes, particularly relevant to learning: attention selects stimuli for processing, while concentration directs effort to what is most important. No review has explored what is known about the influence of music on attention and concentration across multiple clinical education disciplines, which could enhance learning and support clinical educators.

## METHODS

- The PICO framework defined population (undergraduate clinical students), intervention (music), comparator (no music) and outcomes (attention and concentration).
- Academic databases (MEDLINE, Embase, Web of Science, APA PsycInfo, ERIC, CINAHL Plus) and grey literature (Google Scholar, ProQuest Dissertations and Theses) were searched.
- Inclusion criteria were undergraduate clinical students, music exposure for non-therapeutic purposes, cognitive outcomes including attention, concentration or related functions, any study design, worldwide and all publication types. Exclusion criteria were postgraduate students, qualified healthcare professionals, or non-clinical/non-human disciplines.
- After screening 317 titles/abstracts and 54 full texts, limiting to peer-reviewed studies and removing duplicates, five studies (2016–2022) were included and quality assessed.

## RESULTS

1

### Variation in Music Delivery

- There was variation in the timing, mode and duration of music exposure.
- Four studies examined the effect of music during the task, whereas one played music before the task.
- Mode of delivery varied (headphones, pre-recorded video, or unreported), and duration ranged from one minute to 40 minutes.

2

### Differences in Outcome Measurement

- Outcome measures ranged from validated tools (Symbol Digit Modality Test (SDMT) and Stroop Colour-Word Test (SCWT)) to questionnaires.

3

### Influence of Music on Attention and Concentration

- The highest quality evidence reported a statistically significant improvement in SDMT performance with classical instrumental music (Raga Malkauns) compared to no music,<sup>3</sup> and a statistically significant improvement in selective attention when students' preferred music was played prior to the SCWT.<sup>4</sup>
- One questionnaire-based study reported mixed findings, with perceived effects varying between improved attention and distraction.<sup>5</sup>
- Two studies reported less conclusive findings, with either no statistically significant effect of music<sup>6</sup> or only a minority of students favouring background music.<sup>7</sup>

## DISCUSSION AND CONCLUSION

- Although the five studies varied in interventions and outcome measures, some patterns emerged.
- The three highest quality studies<sup>3-4,6</sup> used validated, objective measurement tools and delivered music via headphones, with two studies<sup>3-4</sup> reporting statistically significant improvements in attention or concentration.
- Both used 15-minute listening sessions, suggesting duration of exposure may contribute, while timing appeared less influential.
- Classical instrumental music (Raga Malkauns) and students' preferred music showed statistically significant improvements.
- Overall, some music types may positively influence attention or concentration in undergraduate clinical education.
- However, the small number of included studies and variability in interventions, measurement tools and contexts limit the strength and generalisability of these conclusions, highlighting the need for further research.

## REFERENCES

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