

An Analysis of Measurement Tools Used to Assess Music-Related Memory in Persons with Dementia

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Background

Music therapy and measurement tools

Spiro, Tsirir, and Cripps (2017) systematically reviewed the music-therapy-specific outcome measures. For music therapists, deciding which tool is appropriate and efficient in each clinical setting is crucial. Thus a need for a comprehensive understanding of the related tools is paramount.

Music-related memories and dementia

The holistic understanding of music-related memories is particularly essential for assessing a person's current functions damaged by dementia. There are various type of music-related memory and different aspects of impairment caused by dementia. Therefore, more systematic understanding and assessment are needed.

Aim of this study

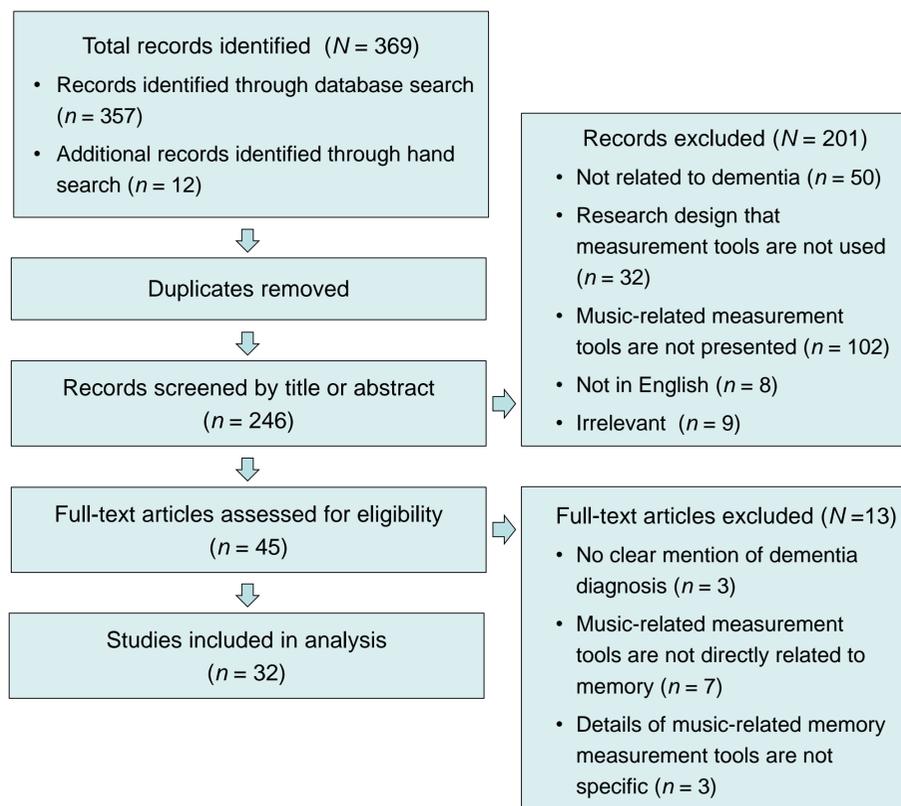
To investigate measurement tools used to assess music-related memory in persons with dementia by literature review

Methods

Literature searches

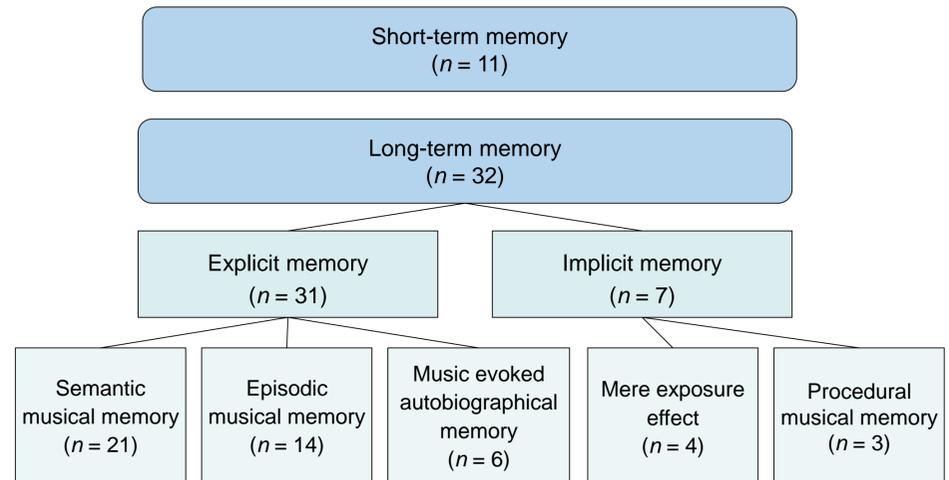
- Searches of databases were conducted from the earliest available data until October 2019 using Academic Search Complete, CINAHL, Cochrane Central, PsycINFO, and PubMed. In addition, relevant journals, including the *Journal of Music Therapy*, *Music Therapy Perspectives* were hand-searched.
- Terms used in the search included dementia, Alzheimer, music, memory, assessment, evaluation, test, and measure*.

Study selection flowchart



Results

Classification of measurements by type of memory



Note. n : Number of studies that measurement tools were used

Major measurement tools of short-term memory

Task	Musical stimuli	Type of assessment
Melody Discrimination	Pairs of unfamiliar melodies	Selected-response (same or not)
Listen and sing along	Unfamiliar song, scale	Constructed-response (performance)

Major measurement tools of semantic musical memory

Task	Musical stimuli	Type of assessment
Familiarity decision	Familiar or unfamiliar melodies	Selected-response (familiar or not)
Title identification	Familiar musical excerpts	Constructed-response (short answer)
Detection of pitch errors	Popular original melodies, melodies included pitch distortion	Selected-response (correct or not)

Major measurement tools of episodic musical memory

Task	Musical stimuli	Type of assessment
Old-new recognition	Familiar / unfamiliar melodies, Sounds of musical instruments	Selected-response (old or new, scale)
Delayed recall of song titles, instrument names	Familiar song, Sounds of popular instruments	Constructed-response (short answer)
Delayed recall of musical performance	Novel musical material	Constructed-response (performance)

Measurement tool of music evoked autobiographical memory

Task	Musical stimuli	Type of assessment
Music evoked autobiographical recall	Favorite or familiar music	Constructed-response (descriptive)

Measurement tool of mere exposure effect

Task	Musical stimuli	Type of assessment
Preference	Unfamiliar melodies	Selected-response (like or unlike, scale)

Measurement tool of procedural musical memory

Task	Musical stimuli	Type of assessment
Musical performance	Well known works	Constructed-response (performance)

Conclusions

- Various forms of music-related memory were assessed, musical semantic memory was assessed the most.
- Various type of assessment were used, selected-response (selection one alternative) was used the most.
- This study is meaningful in that it helps to understand the overall aspects of music-related memories in persons with dementia and develop an evidence-based assessment tool.