

Music Extension - Musicology IAI: Annotated Bibliography

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The Effects of Music Therapy on the Cognition of Dementia Patients

Studies have demonstrated that dementia patients' cognition is improvable through the use of personalised music therapy. The research indicates that music has the ability to increase cognitive abilities within a dementia patient. There have been several studies that look into the link between brain function and music. Some studies suggest that the repetitiveness of music assists with remembering memories as the music carries memories with it. With a focus on emotional connections, perception of musical elements and effective music interventions for cognition, the following annotated bibliography includes a number of references that:

- Describe the cognitive functions of dementia patients;
- Explore the impact of music from certain eras and their rhythmical features; and,
- Recommend strategies of personalised music in order to improve the cognitive state of the patient.

Baird, A, Forde Thompson, W & Brancatisano, O 2019, 'A 'Music, Mind and Movement' Program for People with Dementia: Initial Evidence of Improved Cognition', *Frontiers in Psychology*, 16 July, viewed 6 November 2019

(<https://www.frontiersin.org/articles/10.3389/fpsyg.2019.01435/full>)

The article examines the authors' program: *Music, Mind and Movement* (MMM) and its' usefulness in the areas of cognition, mood, identity and motor fluency within patients with various types of dementia. It describes how the 20 participants had weekly group music therapy sessions for seven weeks. Participants were tested in the previous five areas at three points during the study; baseline, post treatment and one-month post MMM program. The authors go on to describe that Thomas and Schlaug (2015) proposed seven capacities of music and they explain that understanding these capacities, "should lead to more effective music interventions for people with dementia" (Baird A, 2019). Overall, the study found that the MMM program may help improve cognition in people with dementia.

The article included many charts and diagrams which were helpful by clearly displaying the data. The main limitation for the article is that the research is based on a program that was designed by the authors of this article, meaning there may be a strong bias; however, the authors stated that there were no financial relationships that could have influenced their

research. The sample size is also limited meaning the study could be more reliable if a wider range of people had been assessed. Therefore, the article is mostly reliable and supports the usefulness of music therapy in dementia patients for cognition.

Bruer, R, Spitznagel, E & Cloninger, C 2007, 'The Temporal Limits of Cognitive Change from Music Therapy in Elderly Persons with Dementia or Dementia-Like Cognitive Impairment: A Randomized Controlled Trial', *Journal of Music Therapy*, vol. 44, no. 4, pp. 308-328, viewed 9 November 2019, Oxford Academic, Oxford University Press (<https://academic.oup.com/jmt/article-abstract/44/4/308/916344>)

The article explores the limits of cognitive change of an 'intention-to-treat' within group music therapy. Intention to treat analysis assesses the original treatment that was assigned to the patient rather than what they eventually received; therefore meaning, after randomisation of patients they are always analysed. The music therapy treatment was based on the Reality Orientation program which targets cognition in persons who are disorientated. The format of this program is beneficial as it prompts dementia patients to focus on their immediate surroundings in order to lessen confusion. Throughout the sessions there would be at least 15 songs. The article describes how prior to the trial Gibbons (1977) recommended that the most effective therapeutic music selections are those that were popular when the patient was the age of 25. The authors describe that it was decided that the mini-mental state exam (MMSE) should be conducted three times per week, intending to assess cognitive change over 8 weeks. Through this research it was found that dementia patients improved their MMSE scores by 2.00 points compared to the control group. All 28 subjects were cognitively impaired, however, only 17 were diagnosed with dementia. Therefore, the findings are difficult to generalise to only dementia. The study's results were clearly presented through the utilisation of tables and graphs. The study was carried out by professionals in their respective areas therefore making the information reliable. The research supports the idea that music therapy can improve cognitive function however, further research is required to improve treatment.

Lyu, J & Zhang, J 2018, 'The Effects of Music Therapy on Cognition, Psychiatric Symptoms, and Activities of Daily Living in Patients with Alzheimer's Disease', *Journal of Alzheimer's Disease*, pp. 308-328, viewed 10 November 2019, Semantic Scholar, Allen Institute for AI (<https://www.semanticscholar.org/paper/The-Effects-of-Music-Therapy-on-Cognition%2C-and-of-Lyu-Zhang/4584a65b9bc1b93f7116b01e574ceb6cbd6718d4>)

The study analyses the efficacy of music therapy on cognitive function of dementia patients, in particular Alzheimer's disease (AD). The authors describe how music therapy and the use of musical elements such as "melody, rhythm harmony and sound" have been used

effectively for years for the management of dementia symptoms. 298 AD patients were randomly divided into three groups: singing group, lyric reading group and control group. These trials were conducted over three months. Cognitive, neuropsychological and activities of daily living tests were conducted at baseline, 3 months and 6 months later. There were no significant effects of music therapy on activities of daily living; however, there was a positive effect on the other categories. The study advised that music therapy is "effective in enhancing cognitive function and mental wellbeing and can be recommended as an alternative approach to manage AD associated symptoms. The study included examination of patients' well-being not only cognitive function which is useful for a broader understanding but is not necessary for the topic of research. The fact that the patients were randomly divided allows for a true-to-life spread across the groups. The article is reliable and supports the use of music therapy to manage dementia symptoms of decreased cognitive function.

Brotons, M, Koger, S & Pickett-Cooper, P 1997, 'Music and Dementias: A Review of Literature', Journal of Music Therapy, vol. 34, no. 4, 1 December, pp. 204-245, viewed 10 November 2019, Oxford Academic, Oxford University Press (<https://academic.oup.com/jmt/article-abstract/34/4/204/895628>)

This article differs from the others analysed due to its nature of reviewing other literature sources instead of being its own study focuses on reviewing literature that has been published relating to the topic of music therapy in combination with dementia. The article aims to offer recommendations for clinical use, but also for further research. A total of 69 references were reviewed, 42 of which were empirical studies (evidence attained through direct observation). 30 of the empirical studies were clinical studies that used music as a therapeutic intervention. The article effectively analyses the reliability of certain cognitive tests through discerning critiques of other literature sources. The author criticises the MiniMental State Evaluation (MMSE) as it lacks distinction of "minor language deficits and lack of assessment of fluency and intentionality." As well as criticising, the article offers recommendations of tests such as Glynn's (1992) MTAT which tests the efficacy of music therapy on behavioural patterns on patients with Alzheimer's disease and other related disorders (ADRD). The research and findings are limited by the fact that the article was released in 1997 meaning it may not be reliable for modern. Another limitation identified in the article is that over half the research conducted was done by medical professionals who are not music therapists. Many tables were used throughout the review to demonstrate data across the studies with clarity. The article supports that music therapy can enhance cognitive skills in ADRD patients; however, the research is over twenty years old, making recent research more reliable.

Vink, A 2003, 'Music therapy for people with dementia', Cochrane Library, viewed 12 November 2019

(<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003477.pub2/abstract>)

The study examines ten studies on music therapy as a treatment. It aims to assess the efficacy of music therapy for improving emotional and social functioning and reducing / cognitive and behavioural issues. Studies that used varying methodologies were included in the review allowing for a broader perception of music therapy. The studies were analysed by two reviewers who found that the methodologies were of low quality due to there being no long-term effects of the treatment; therefore, results could not be validated. Many of the studies reviewed had high risks of bias, discrediting the outcomes. Any form of music therapy (any treatment based on music) was considered in this review meaning the authors have failed to eliminate variables between studies; henceforth, diminishing the reliability of the results. There was an inability for the authors to refute or endorse any claims or effects stated within the studies being reviewed. Authors of the review concluded that although the ten studies were in support of music therapy treatment, they were unable to draw any useful conclusions.

ABC Science 2016, Power f Music on The Brain I Dementia & Parkinson's, online video, 6 June, viewed 15 November 2019

(<https://www.youtube.com/watch?v=rnUSNbqtVJI>)

ABC Science's video intends to demonstrate the power of music on the brain. The video uses reliable primary sources including the pioneers of the music therapy idea and their patients. Brain scans have shown that music is connected to the brain through many ways such as movement and memory. This therapy involves curating a personalised playlist of music for dementia patients consisting of music that is favourable for the patient. It is supported through this documentary that music from the 1950's works best for improving emotional and cognitive problems as it was music known to them in their 20's. A combination of musical elements allow the messages to be transmitted to the brain and become memory, later in life contributing to the ability to recall the music. The documentary focuses on the impact of music on the brain through the use of tempo, pitch and dynamics. One of the researchers describes the belief of music being the pre-evolutionary language, describing how sounds links to the prelinguistic stages as a child causes dementia patients to still be able to remember music and its' elements. The primary sources used in this video assist in gaining a first-hand perspective. Visual representation of the therapy is beneficial to witness the physical reactions of the patients to their music. Experts contended that music therapy through the use of personalised playlists had a definite response from dementia patients

Research Process and Ideas:

During the beginning of my research process I first had to decide on a topic that not only was of interest to me but also one that provided a multitude of research around it. From the beginning, the topic of psychology and music was very interesting to me, so I looked into what different ideas there were around that topic. Child development came up but the idea that was of most interest to me was how music was able to treat dementia patients.

Once I started the research stage, I considered changing my topic because I had been struggling to find a link between musical elements and cognition. Most of the articles and journals described music therapy in more medical terms rather than talking about the elements of music. Through further research I was able to find how musical elements assisted in cognitive function.

The research then continued smoothly, and I structured my annotated bibliography based on a combination of styles that I had researched online. For each source I first noted the citation, then outlined what the main point of the article was and what it was trying to get across. The viewpoint of the author was then taken into consideration followed by the strengths and limitations of the article. To finish, a final evaluative statement about the overall findings and usefulness of the research.

Overall Reflection:

If the research were to be conducted again more varying sources would have provided a more in-depth analysis rather than the use of mostly academic studies. The effects of music therapy on the cognition of dementia patients was a good choice of topic for me to make as there is a lot of research surrounding it; although, finding information on musical elements proved difficult. The sources showed an overall support of the use of music therapy to treat dementia with few insignificant results. The findings from this research for my IA1 has provided good grounding for further research for my IA2.

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