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Review Article

The Effectiveness of Music Therapy on Anxiety and Blood Pressure in Older People with Hypertension: A Literatur Review

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Abstract

Aims: As people get older, numerous cardiovascular disorders, including hypertension, which many older people have, will become more prevalent. Music therapy, as a non-pharmacological therapy, can be used to reduce blood pressure and anxiety in hypertensive patients.

Objective: This literature review aims to determine the effectiveness of types music therapy that can reduce anxiety and blood pressure in the elderly with hypertension. **Methods:** To conduct a type of literature review, 10 articles that discuss the effectiveness of music therapy in lowering blood pressure and anxiety in hypertensive patients were searched for. The databases used are Pubmed, Google Scholar, and Science Direct, by entering keywords. The inclusion criteria used for data collection were full text, type of research (RCT, quasi-experimental, and pre-experimental), in English and Indonesian, and journal publishing from 2018 to 2023.

Result: Ten relevant articles, including 505 respondents, were extracted in this study. Most of the studies (70%) showed significant results, showing that music therapy (traditional, classical, and spiritual) was effective in reducing high blood pressure and anxiety. Favorite music has a stronger effect than foreign music, such as traditional music, which has a deeper emotional impact on the elderly.

Conclusion: Music therapy is effective in reducing blood pressure and anxiety in the elderly, and besides that, it is cost-effective and easy to use. Further research on the application of traditional music types is needed to determine the effectiveness of the music.

Keywords:

Anxiety, Blood pressure, Elderly, Hypertension, Music Therapy

INTRODUCTION

WHO (1) states that an elderly population is defined as a population aged ≥ 60 years. The global population of people aged 60 and over topped 1 billion in 2019. In 2030 and 2050, respectively, this number will increase to 1.4 billion and 2.1 billion

(1). Currently, Indonesia has entered a period of aging population, in which there is an increase in life expectancy followed by an increase in the number of elderly people (2). Based on data (3) the number of elderly people has reached 17.581 million. Old age will have consequences for increasing various cardiovascular diseases that many

elderly people experience, namely hypertension (4).

The estimated number of cases of hypertension diagnosed in 2013 was 25.8%, which increased in 2018 to 34.1% (5). One of the factors that triggers the incidence of hypertension in the elderly is anxiety (6). Anxiety in the elderly is the most common thing associated with age. The mental unpreparedness of the elderly in dealing with change will trigger an attitude of hopelessness, leaving them feeling lonely and unappreciated. Hypertension is one of the main risk factors for heart disease. Therefore, hypertension is categorized as one of the most common comorbid diseases, which costs 5.4 trillion (7). Comorbid elderly with hypertension will require Long-Term Care (LTC) to control blood pressure.

The Indonesian government has carried out non-communicable disease (PTM) surveillance efforts, including geriatrics services and pharmacological therapy. However, these two efforts have not yet had an optimal impact. Long-term care use of antihypertensive drugs will cause various side effects (8). Given the various side effects of antihypertensive drugs, nonpharmacological treatment is highly preferred.

Music therapy is one of the non-pharmacological treatments that can be used to lower blood pressure and anxiety in hypertensive patients (9). By considering the neurological system's mechanism of action and chemicals linked to stress, such as cortisol, music therapy has a favorable impact. So far, music therapy research has always chosen classical music (Mozart). In fact, the choice of favorite music has better effectiveness than foreign music (10), which is rarely heard, such as classical music, which is not suitable for the culture of the elderly. One type of music that is closely related to culture is traditional music (11).

In fact, the research is very limited to one factor, namely a decrease in blood pressure or a decrease in anxiety. During the survey conducted, there was no research that combined the analysis of the effectiveness of the best type of music therapy in reducing anxiety and blood pressure. Therefore, this study was conducted to determine the effectiveness of this type of music therapy in reducing anxiety and blood pressure in elderly people with hypertension.

METHODS

The research design used is a literature review. The search was carried out using four databases, namely Pubmed, Google Scholar, and Science Direct. The search for literature sources used inclusion criteria, type of research Randomized Control Trial (RTC), quasi-experimental, and pre-experimental, articles starting in the 2018–2023 range, in English or Indonesian, and full text. Search articles using keywords and boolean operators (AND, OR NOT, or AND NOT). Keywords adapted to Medical Subject Heading (MeSH), such as high blood pressure or hypertension, traditional music therapy or music therapy or music intervention, anxiety, geriatric, older, or elderly.

Critical appraisal is used to assess eligible studies. The study fulfills the inclusion criteria if it at least partially satisfies (50%) the critical appraisal criteria with the mutually determined cut-off point value (12). To avoid bias in the validity of the results and review suggestions, researchers excluded poor-quality studies. Based on the last screening of articles used in the literature review consisted of 10 articles. The results of the selection of study articles can be described in the flow diagram below:

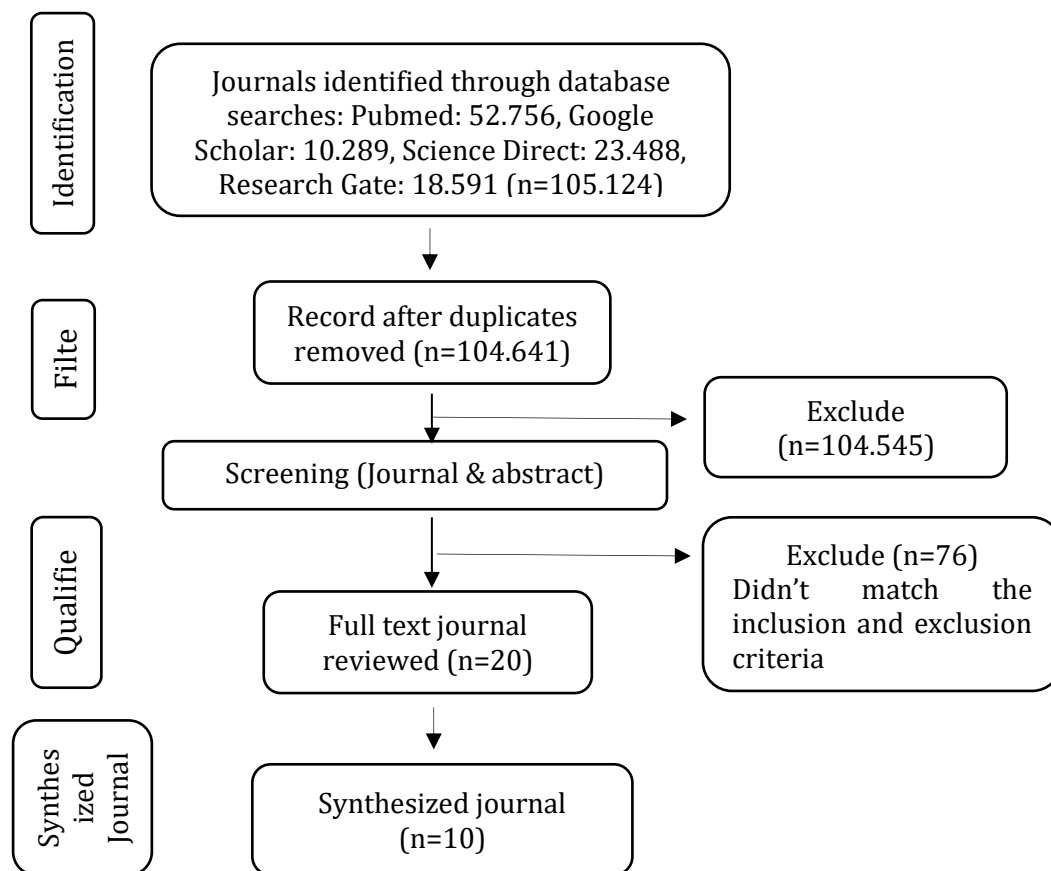


Figure 1. Flow Diagram based on PRISMA

RESULT

A total of 10 studies were selected for inclusion in the final analysis. Three pre-experimental articles, five quasi-experimental studies, two randomized control trial articles.

Respondent Characteristics

The study comprised a total of 505 patients. All research involved both male and female participants. The patient's average age is greater than 60. Stage 2 hypertension was the most prevalent stage of hypertension in this study when it came to the participants' clinical condition, which was diagnosed with hypertension at multiple stages.

Intervention Music Therapy

All of the trials that were examined used some sort of intervention, while five of them merely used music therapy (11,13-

16). Three studies conducted music therapy with combination interventions (8,17,18), and two studies conducted music therapy with comparison interventions (19,20). The combined intervention consisted of modifications of PMR (progressive muscle relaxation), foot massage, and deep breathing. The duration of each music intervention is 15 to 30 minutes. Most of the studies (n = 5) examined the effect of music on one intervention. The longest-duration study was conducted by (16) for 10 weeks, and five other publications implemented more than a single music intervention.

The music used in the study has variations from different countries, consisting of western music, classical music, instrumental music, folk music, traditional music, spiritual music, and ordinary music, which includes CD-sound music and

calming music. Classical music is the genre that is most frequently used as treatment music. Music therapy interventions from 10 studies have different durations, frequencies, and times of application. The average time spent in music therapy was 15 minutes, and the typical frequency was three days per week for 30 days. However, given the quality of studies that have demonstrated substantial outcomes with a lower frequency, meaningful results could be obtained with a lower frequency of six to thirteen days (8,19).

Clinical Result

In 10 trials, music therapy effectively decreased anxiety and high blood pressure, and the majority of studies (70%) had significance findings. The mean comparison of systolic reduction in the intervention group was 17.79 mmHg and 11.14 mmHg in diastolic. While the average decrease in anxiety is from the moderate anxiety category to the mild anxiety category. The choice of music used also affects patient comfort, such as when using the patient's favorite music (14).

Side Effects

All studies reported no adverse events during the intervention, but one study indicated that if an adverse event occurred, a rest period was required before starting the intervention again. As therefore, this therapy may be applied as an alternative therapy in combination with pharmacological treatment.

DISCUSSION

According to the research results of a full review of research, music therapy has advantages in decreasing anxiety and blood pressure in hypertensive patients. However, there are several studies that state that music therapy is not effective in lowering diastolic blood pressure (8,16,17). Important factors include the amount of time needed for therapy to be effective therapeutically and the comparison of individual music sessions with desired or

random music selections. The average time to listen to music in the article above is 15–30 minutes; this is in accordance with the Nursing Intervention Classification (NIC), which suggests that music therapy is sufficient for 15 minutes. Promising effects of music treatments on cardiovascular physiology, along with low costs and high levels of safety (19).

There is no doubt about the effectiveness of music therapy using classical music because a lot of research has been done. However, research using traditional music is still limited. In fact, elements of traditional music are not much different from classical music, which can provide peace for listeners (13). Indonesia, as a country consisting of various cultures, certainly has various types of traditional music that can be used as music therapy. Based on reviews that have been carried out, various types of traditional music have been used as complementary therapy, especially in reducing anxiety and blood pressure, such as Javanese style, Sundanese gamelan, Javanese gamelan, Balinese song, and Balinese gamelan selonding. Additionally, many nations around the world, like Thailand and China, have used traditional music as music therapy.

There are numerous physiological, psychological, emotional, and cardiorespiratory changes that occur when someone is listening to music (8). Inducing a state of calm through music can activate the hypothalamus, which affects the production of endorphins, cortisol, and catecholamines, which lowers blood pressure. Music stimulation in the hypothalamus will affect the anterior pituitary by decreasing CRF production, thus affecting the decrease in *adrenocorticotrophic hormone* (ACTH) production. A decrease in ACTH will decrease the level of cortisol produced by the adrenal cortex. Decreasing cortisol lowers heart rate, blood pressure, and respiration rate. Additionally, music affects behavioral, emotional, cognitive, and

sensory aspects of older persons (e.g., decreasing psychological tension, depressive symptoms, and anxiety) and raises alpha brain waves, which are associated with relaxation and tranquility. (16).

Individual responses to music can be affected by personal preferences, musical familiarity, the surrounding environment, prior musical experiences, and other health concerns. Music related to traditional culture has a deeper emotional impact than music that is unfamiliar to listeners (11). In addition, listening to music is one of the psychological rehabilitation activities that can overcome emotional disturbances experienced by sufferers (20). Traditional music therapy can affect the mood of the elderly for the better, so that the mood becomes calmer and more comfortable. Therefore, the selection of music used greatly affects patient comfort, so that patients are excited and enthusiastic to repeat doing music therapy themselves (14).

The implication of the results of this literature study is an increase in traditional music therapy programs that can be carried out continuously in elderly care units because elderly people with hypertension will need long-term care (LTC) to control blood pressure. Long-term care use of antihypertensive drugs will cause various side effects such as headache, dry cough (8). Considering the various side effects of antihypertensive drugs, non-pharmacological treatment is highly prioritized.

While receiving medication, traditional music therapy can be employed as a complementary method (8). In addition, there have been no reports of music therapy having side effects during the intervention, so music therapy is physically and mentally safe and easy to apply. Nurses as nursing care providers can apply traditional music therapy in all elderly care units in Indonesia as one of the activities to

improve the quality of life of the elderly, especially those with hypertensive.

CONCLUSION

This research evaluation showed that music therapy for lowering high anxiety and blood pressure in the elderly is efficient, affordable, and simple to apply. The results of this research can serve as the basis for supplementary therapy or as an independent of creative interventions in the nursing treatment of persons with hypertension. Further research on the application of traditional music types is needed to determine the effectiveness of the music. Because favorite music has a better impact than foreign music that is rarely heard.

CONFLICT OF INTEREST

The author of this article declares that there was no conflict of interest.

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ETHICS APPROVAL

Not applicable

AUTHOR CONTRIBUTION

All stages of this research, including preparation, data collecting, data analysis, preparation, and approval for publishing of this manuscript, are equally contributed to by all authors.

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