

ORIGINAL ARTICLE

Effects of Gayatri Mantram on Decreasing Anxiety in Elderly People with Diabetes Mellitus

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ABSTRACT

Introduction: Diabetes is a chronic disease that occurs frequently in the world and affects all age groups. Globally, more than one in 10 adults are now living with diabetes, and almost half from that is an elderly. The psychological problems experienced by parents with diabetes mellitus, if prolonged, can have a significant negative impact on their physical and mental health. Among Hindus, Gayatri Mantram Meditation is known as one of the popular forms of meditation. It has great significance in mental health promotion by enlightening the deeper levels of consciousness and dealing with life's mental health issues. This study aims to evaluate the effectiveness of Gayatri Mantram Music Therapy on anxiety levels in the elderly with diabetes mellitus. **Methods:** The study design is one group pre and post-test quasi-experimental. This study was conducted in the working area of Busungbiu I Health Center Bali with a sample of 56 elderly with diabetes mellitus. The statistical analytical method used is the paired t-test. **Results:** The results showed that before the intervention, the majority of elderly had severe anxiety as many as 27 people (48.2%) after the intervention, the majority of elderly experienced a decrease in anxiety on a moderate scale as many as 25 people (44.6%). The results of the paired t-test showed that Gayatri Mantram music therapy the effect is significant in reducing anxiety levels, especially in the elderly group living with diabetes mellitus. ($p = 0.000$). **Conclusion:** Nurses and other caregivers can implement Gayatri Mantram music therapy is used as a preventive intervention to help reduce anxiety levels in elderly Hindus living in nursing homes.

Malaysian Journal of Medicine and Health Sciences (2026) 22(SUPP9):168-172. doi:10.47836/mjmhs.22.s9.26

Keywords: Gayatri Mantram, diabetes mellitus, anxiety, elderly

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INTRODUCTION

Diabetes is considered one of the most common chronic conditions in the world (1). Over the past twenty years, increasing obesity and reduced physical activity have led to a surge in diabetes mellitus (DM) cases globally. Over the past twenty years, increasing obesity and reduced physical activity have led to a surge in DM cases globally. More than 10% of adults in the world live with diabetes (2). In many countries, one in five or more adults are now living with diabetes. Since 2000, the prevalence of diabetes in the 20-79 age group has more than tripled, from 151 million (4.6% of the global population) to 537 million (10.5%) today. (3). If insufficient steps are taken to address this issue, an estimated 643 million people will be living with diabetes by 2030 (11.3% of the population). This figure is projected to increase dramatically to 783 million (12.2%) by 2045 if trends continue (4).

DM is increasingly common worldwide and ranks as one of the top 10 most common diseases causing death (5). About 20% of the elderly are diagnosed with diabetes mellitus (DM), with almost the same number having undiagnosed DM. The data shows a variation in frequency between 18% to 33%, which may be due to differences in age, lifestyle and genetic background of the studied population (3, 6). As many as 30% of the elderly have impaired glucose regulation, a condition that increases their likelihood of developing DM. Diabetes condition can have psychological effects on elderly. Long-term psychological issues can negatively impact anxiety may arise as a result of health problems (7). Neuroses, like severe anxiety or panic disorders, may result in dangerous behaviours. In challenging situations, patients may react aggressively, posing risks to themselves and others. Research shows that meditation, is effective in reducing anxiety in the elderly (8). Jon Kabat-Zinn describes meditation as being fully aware of the present moment without judgment. It has been shown to alleviate psychological issues, including anxiety, depression, and insomnia.

The gayatri mantram meditation is widely practiced among Hindus and Including the most powerful mantras

in Indian Vedic literature (9). It plays a significant role in promoting mental health by enhancing deeper consciousness and addressing various mental health challenges. Numerous studies have highlighted the positive effects of chanting the gayatri mantram in alleviating depression, anxiety, stress, anger, and negative emotions. It also enhances various mental skills, such as relaxation, visualization, focus, self-confidence, self-concept, management of anxiety and worry, and cultivating positive emotions (10). The mantra has a notable impact on the autonomic nervous system and brain waves, which in turn influence attention and memory (11, 12). As a cost-effective spiritual practice, the gayatri mantram promotes mental well-being, improves quality of life, and helps alleviate the struggles of the material world, aiding in the journey toward spiritual liberation. The unique syllables of the Gayatri Mantram contribute to its powerful effects in physical life (13).

In this modern era, anxiety disorders are among the most common mental health problems experienced by people around the world. They represent a typical reaction to stressors that remain unresolved, leading to physical and psychosocial complications (14). In this modern era, anxiety disorders are among the most common mental health problems experienced by people around the world. They represent a typical reaction to stressors that remain unresolved, leading to physical and psychosocial complications (15). About 4% of the world's population struggles with anxiety issues. gayatri mantram music therapy, based on research, can be an effective alternative to reduce anxiety and prevent its recurrence in Hindu elderly (10, 13). Additionally, the gayatri mantram significantly impacts mental recall, anxiety, and overall mental hygiene. Regular chanting and listening to the mantra can enhance memory, improve health, and elevate quality of life, along with positively affecting anxiety and mental well-being. This study aims to explain the effectiveness of gayatri mantram music therapy on anxiety levels in the elderly with diabetes mellitus.

MATERIALS AND METHODS

This study used a one-group quasi-experimental design and was conducted at Busungbiu Health Center, Bali, Indonesia, from May 20 to June 20, 2024. On April 5, 2024, the ethics committee of STIKes Buleleng Bali gave ethical approval for the conduct of this study, with ethical certificate number 631/EC-KEPK-SB/IV/2024. All elderly people with diabetes who live in social institutions are used as the population in this study. Fifty-six elderly Hindus with diabetes mellitus, samples were selected from those who met the inclusion criteria. inclusion criteria in this study: (1) Hindus aged 60-89, (2) have been diagnosed with diabetes for at least 1 year, (3) signing the informed consent, (4) able to mobilize themselves, and (5) not on medication for anxiety.

Purposive sampling was used to recruit the samples. The independent variable in this study is gayatri mantram music therapy, and the variable that is the focus of research is the level of anxiety in the elderly group with diabetes.

The research tools used in this study were the standard operating procedures of gayatri mantram music therapy and the Hamilton Anxiety Rating Scale (HARS) instrument. The Gayatri Mantra music therapy intervention was conducted according to standard procedures described in previous literature (16). Participants were instructed to undergo the therapy in a quiet and comfortable environment, either at home or in a place of worship. The intervention was preferably performed in the early morning, when the air was fresh, or in the late afternoon before sunset. During each session, participants were asked to sit comfortably, either cross-legged or on a chair, while maintaining an upright posture. The session began with initial relaxation, during which participants took slow and deep breaths three to five times. They were then guided to focus their attention on their breathing to calm the mind while listening to the Gayatri Mantra music through an audio recording. Participants received the music therapy three times per week for four weeks, with each session lasting approximately 10–15 minutes. During the therapy, participants were encouraged to visualize light or positive energy surrounding the body. At the end of each session, participants sat quietly for two to five minutes to absorb the calming effect of the therapy and concluded the session with gratitude or a positive affirmation. HARS was among the first instruments developed for the assessment of anxiety symptoms in adolescents and adults. It remains in current use, both in clinical practice and in research studies, and is considered a valuable resource in the field (17). The scale under consideration is comprised of 14 items, with each item defined through a series of symptoms. The scale's function is to assess psychic anxiety (e.g., mental distress and psychological distress) and somatic anxiety (physical symptoms that arise from anxiety) (18). The statistical analysis used in this study was a paired t-test if the data from the diabetic respondents were normally distributed. However, if the data were not normally distributed, a non-parametric test using the Wilcoxon test was used.

RESULTS

The research site was Busungbiu 1 health centre, one of the health centres in Busungbiu Village, Busungbiu Subdistrict, Buleleng Regency, Bali, Indonesia. Busungbiu I Health Center is a health center with an inpatient service type with a working area of 64.99 KM, and a population of 26,581 people. This study included 56 elderly people with diabetes mellitus in the gayatri mantram intervention group. The following table (1) presents a compendium of the characteristics of the elderly subjects who participated in this study. The

characteristics of the elderly in this study are shown in Table I. As demonstrated in Table I, it is evident that the majority of participants are female (66.7%), and the vast majority of these individuals fall within the age range of 60-74 years (87.5%), with the highest final education being elementary school at 57.1%.

Following the normality test, the pre-test and post-test scores were obtained and assessed for data distribution. The normality test showed a significance value of 0.817, which was greater than 0.05. This indicates that the data were normally distributed. Therefore, a parametric statistical test, specifically the paired t-test, was used to compare the pre-test and post-test scores.

Table 1. Demographic Characteristics of Elderly with Diabetes Mellitus at Busungbiu I Health Center April-June 2024 (n = 56)

Indicator	Frequency	Percentage
Gender		
Male	19	33.9
Female	37	66.1
Age		
60-74 years	49	87.5
75-89 years	7	12.5
Education		
Not School	8	14.3
Elementary School	32	57.1
Junior High School	11	19.6
Senior High School	5	8.9

Based on the Table II, it can be seen from 56 respondents, before intervention, the majority of elderly subjects diagnosed with diabetes mellitus exhibited symptoms of severe anxiety, with a total of 27 subjects (48.2%) demonstrating this condition, and an additional 35.7% exhibiting very severe anxiety. After the provision of Gayatri Mantram music therapy intervention, there was a decrease in the number of elderly people experiencing

Table II. Distribution of Variable

Anxiety in Elderly	Frequency	Percentage
Pre-test		
Mild	1	1.8
Moderate	8	14.3
Severe	27	48.2
Very Severe	20	35.7
Post-test		
Mild	6	10.7
Moderate	25	44.6
Severe	22	39.3
Very Severe	3	5.4

Table III. Paired T-Test Results

	Mean	SD	Std. Error Mean	95% CI		t	df	Sig. (2-tailed)
				Lower	Upper			
Pre-test – Post-test	9.983	5.429	0.726	8.439	11.347	13.635	55	0.000

anxiety on a very severe scale to 5.4%.

From Table III, it can be seen that the Paired T-Test test produces a p-value = 0.000 ($p < 0.05$), which means that there is a significant effect of Gayatri Mantram music therapy in reducing anxiety in the elderly with DM.

DISCUSSION

A study was conducted in order to ascertain the levels of anxiety experienced by the elderly prior to and following the intervention. Before the intervention, most of the elderly experienced anxiety levels that were classified as very severe. The present study examined the impact of Gayatri Mantram music therapy on anxiety levels over a period of four weeks. The findings indicated a significant reduction in anxiety levels, aligning with the research conducted by Irshad & Chaudhry (2015). This earlier study highlighted anxiety as a substantial psychological concern, particularly among the elderly population. Their study found that respondents experienced higher anxiety levels compared to other psychological issues (19). The results showed a reduction in anxiety levels in older people after the intervention. Older adults tend to use more adaptive coping strategies than younger individuals (20). Notably, all of the participants in this research are elderly were maturity and cognitive abilities tend to improve with age. This situation explained that age influences an individual's approach to problem-solving (21).

Older adults usually use more adaptive treatment strategies than young ones (22). Erikson (2010) asserted that ego maturity characterizes the individuals who are entering the age of 60 and more due to the previous experiences they have gained (23). Severe anxiety greatly affects the individual's perception, the individual tends to focus on something detailed and specific, and cannot think about anything else. At this level the individual experiences headaches, dizziness, nausea, tremors, insomnia, palpitations, tachycardia, hyperventilation, frequent urination and defecation, and diarrhea. Emotionally the individual experiences fear and all attention is focused on himself (24).

With age, individuals reach emotional maturity, so they are better able to deal with feelings of hopelessness or anxiety by utilising past experiences. The elderly, as a group in the final stages of aging, have had many life experiences. These experiences help them to be more open in accepting internal feelings without feeling the need to negatively judge or reject unpleasant emotions and sensations

This study sets out to explore the impact of gayatri mantram music therapy on anxiety levels in elderly individuals diagnosed with diabetes mellitus. The findings of this study demonstrated that gayatri mantram music therapy effectively reduces anxiety levels in elderly people with diabetes mellitus. The findings of this study demonstrate that the implementation of a paired t-test analysis resulted in a statistically significant reduction in anxiety levels both before and after the intervention. This decrease was attributed to the Gayatri Mantram musical therapy, conducted twice a week for four weeks, each session lasting 10-15 minutes. The way individuals solve problems is influenced by the frequency of brain stimulation or exercise. Positive stimuli help the brain learn to reflect on judgmental thoughts. Achieving a mindful state allows individuals to manage their emotions without causing harm to their body and mind (12).

From the research of Suryati et al., (2021) it is emphasized that the mechanism of music therapy is that when listening to music it will increase immunoglobulin A which reduces the production of the stress hormone cortisol, so it can reduce anxiety (25). Sound stimulation will increase the release of endorphins which will cause relaxation. This music therapy is very helpful for people who have emotional problems in expressing feelings, making positive changes with mood, helping to solve problems (26). Music therapy is also one of the treatments in dealing with stress and anxiety (27). The duration for each activity can be modified to be shorter, a maximum of 3 times a week on different days, for 10-15 minutes, to reduce anxiety (10). In Hinduism, individuals entering retirement are said to be in the life stage of wanaprastha. During this phase, the elderly gradually detach from worldly concerns and prioritize family, focusing more on spirituality and their relationship with God while seeking spiritual fulfillment through humility and emotional regulation (11, 28). There are other factors that can affect anxiety in the elderly, but this study did not examine such as social support for the elderly, this is related to the elderly support system, namely low family support can cause the elderly to experience anxiety (29). Simultaneous music intervention has been shown by many studies to have beneficial effects on depression and anxiety, because it increases alertness and sensitivity to positive emotions, that simultaneous music intervention can reduce blood glucose levels and HbA1c (30). Hindu spiritual music has been shown to be more effective in reducing anxiety and gayatri mantram music therapy is one of the Hindu spiritual music that significantly helps the elderly manage sources of anxiety and increase their awareness of their existence (31). This approach instills the belief that life will continue as it should, so that they are free from psychological and physical suffering.

CONCLUSION

The results of this study indicate that the Gayatri mantra

is effective in reducing anxiety in elderly Hindus. Nurses and other caregivers can implement similar therapies as an effort to reduce stress levels. This therapeutic intervention can be employed as a preventative measure to reduce anxiety levels among elderly Hindu individuals residing in nursing homes. Further studies are recommended to examine the impact of mindfulness and Gayatri Mantram on psychological conditions, such as stress and depression. Additionally, there is a need for further research to investigate the role of other variables that contribute to anxiety in elderly individuals, including social support (caregivers), culture, and environment.

ACKNOWLEDGEMENTS

The authors extend their gratitude to the academic authorities, and all of the respondents for their support and contributions to this study.

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