

Enhancing mental well-being in coronary heart disease patients: the impact of integrated spiritual care and murottal auditory therapy on reducing anxiety and depression

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Abstract

Coronary heart disease, the most prevalent non-communicable disease, poses both physical and psychological challenges, includ-

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ing anxiety and depression. Addressing these issues requires a holistic approach that integrates biological, psychological, social, and spiritual dimensions. Spiritual care interventions can alleviate psychological distress and enhance patient satisfaction in nursing care. This study explored the impact of combining spiritual care with murottal auditory therapy to reduce anxiety and depression in patients with coronary heart disease. In this quasi-experimental study, 110 participants were divided into intervention and control groups, each with 55 participants selected based on specific criteria. Anxiety and depression levels were assessed using the validated Depression Anxiety Stress Scale (DASS). The intervention group received daily murottal therapy sessions lasting 15 to 20 minutes for three days at Siti Khadijah Islamic Hospital in Palembang from March to July 2023. Pre-test and post-test assessments were conducted. The results indicated that a significant proportion of patients in the intervention group experienced mild anxiety (52.7%) and reduced depression (65.5%) after murottal therapy. Significant differences in anxiety and depression levels were observed between the intervention and control groups, with p-values of 0.000 for both. murottal auditory therapy, mainly using Surah Ar-Rahman, effectively reduces anxiety and depression in patients with coronary heart disease, offering a promising complementary treatment approach.

Introduction

Global disease patterns have shifted with the increasing prevalence of non-communicable diseases, among which cardiovascular disease is a significant concern and remains the leading cause of death worldwide.² In 2013, the World Health Organization reported that 17.3 million people died from cardiovascular disease globally, with projections indicating an increase to 23.3 million by 2020.³ According to the 2019 Global Burden of Disease Report, cardiovascular disease was Indonesia's fourth leading cause of mortality.⁴ This condition results in both physiological and psychological changes, including social isolation, anger, anxiety, stress, and depression.⁵ Approximately 70-80% of individuals with heart disease experience anxiety.⁶

Patients often experience changes in response to threatening and unexpected situations.⁷ For many, anxiety and depression arise from facing uncertainty, concerns about treatment effects, fear of disease progression and death, feelings of guilt, and spiritual doubts.⁸ If not managed properly, anxiety can worsen a patient's condition, leading to additional issues such as depression, sleep disturbances, an increased risk of suicide, and a decreased quality of life for those with coronary heart disease. High levels of anxiety about the disease often indicate dissatisfaction with the healthcare services received. Therefore, further treatment and support are necessary.⁹

In times of crisis, individuals with coronary heart disease may experience heightened levels of anxiety and depression, which can significantly affect their overall health and disease progression.¹⁰ Research by Nuraeni *et al.*¹¹ supports this, indicating that patients with coronary heart disease have anxiety levels at 74.25% and depression levels at 66.75%. Similarly, a study by Febriana *et al.*¹² reports that anxiety levels among these patients are very high, reaching up to 71.12%. According to Lestari *et al.*,¹³ nurses play a crucial role in crises by providing optimal, holistic nursing care that emphasizes the spiritual aspect. Spirituality is a critical component of comprehensive care and maintenance. A holistic approach to healthcare that addresses spiritual needs can strengthen an individual's faith and connection with the Creator, helping those dealing with illness or weakness develop greater confidence and acceptance during the healing process. Music therapy serves as a form of distraction therapy, providing an alternative method for addressing psychological, psychiatric, and physical disorders. Numerous studies have shown its safety and effectiveness in improving mood and reducing anxiety, depression, and other mental health issues. Music is well-regarded for its ability to redirect attention and promote relaxation.¹⁴ One genre with notable therapeutic benefits is spiritual or murottal music, which involves the recitation of holy Quranic verses with precise pronunciation (tajwid) and rhythmic delivery. Listening to these sacred recitations, known as murottal, has been found to induce a sense of calm.¹⁵ Among the frequently used verses in therapy is Surah Ar-Rahman, a chapter of the Quran that emphasizes Allah SWT's blessings to His servants. Its simple yet eloquent language, with a recurring question, repeated 30 times, contributes to its therapeutic effects. Research by Kismana¹⁶ supports this, indicating that repetition in Surah Ar-Rahman can positively influence brain function due to its straightforward and consistent nature. Additionally, Surah Ar-Rahman provides valuable lessons in gratitude for Allah's blessings, acceptance of His divine will, and the understanding that healing from all ailments is within Allah's control.¹⁷ Islamic spiritual care, which involves listening to holy Quranic verses at a volume below 60 decibels, can influence brain waves to promote relaxation and calmness. Research by Asrul¹⁸ supports this, comparing the effects of listening to Quranic verses with classical music. The study found that listening to Quranic verses resulted in a 12.67% increase in the correlation between left and right brain alpha waves, compared to a 9.96% increase with classical music. These results suggest that Quranic verses more effectively enhance alpha wave activity, which is associated with a relaxed state, compared to classical music.¹⁹ Additionally, Harisa *et al.*²⁰ discovered that the therapeutic effects of Quranic verses are amplified when accompanied by translations, outperforming the impact of listening to the verses alone. murottal hearing therapy can improve comfort levels in patients with heart disease. However, those with cardiovascular conditions often require ongoing treatment and an extended recovery period if their needs are not adequately addressed. Therefore, this study aimed to evaluate the impact of murottal hearing therapy on anxiety and depression levels in hospitalized patients with cardiovascular disease.

Materials and Methods

Research design

This study utilized a quasi-experimental pre-post design with a control group to evaluate the impact of murottal auditory therapy

on anxiety and depression levels in patients with cardiovascular disease. The design involved measuring mental health indicators before and after the intervention, allowing for comparisons between patients who received the therapy and those who did not. This approach aims to provide strong evidence of the effectiveness of murottal auditory treatment in alleviating psychological distress, such as anxiety and depression, in this patient population.

Study participants

Data were collected from March to July 2023 at Siti Khadijah Islamic Hospital in Palembang, South Sumatra, Indonesia. The sample size of 110 patients was determined using the Lameshow formula, with participants evenly divided into 55 individuals in the control group and 55 in the intervention group. Patients were selected through purposive sampling based on specific criteria, including a diagnosis of coronary heart disease, awareness, practical communication skills, Muslim identity, and no hearing impairments. Patients with unstable hemodynamics or cognitive impairments were excluded from the study. Before data collection, informed consent was obtained from all participants and their families, ensuring they were fully informed about the study's objectives and procedures.

Variable, instrument, and data collection

The independent variable in this study is murottal auditory therapy, while the dependent variables are levels of anxiety and depression. Additionally, participant characteristics such as age, gender, education, occupation, medical diagnosis, and illness duration were recorded to understand the study population comprehensively. The participants, all cardiovascular patients receiving treatment at the hospital, were randomly assigned to either a control group or an intervention group. A pre-test was conducted before the intervention to establish baseline levels of anxiety and depression in both groups, ensuring that any observed changes could be attributed to the therapy. This design allowed for a thorough comparison of the effects of murottal auditory therapy on the participants' psychological well-being. Anxiety and depression levels were assessed using the Depression Anxiety Stress Scale (DASS), a self-report tool designed to evaluate emotional states, including anxiety and depression. The DASS includes 14 items for each scale, with ten items measuring somatic symptoms and four assessing anxiety-related affective symptoms. Validated by previous research in Indonesia, the DASS has demonstrated effectiveness and reliability, with the anxiety scale achieving a Receiver Operating Characteristic (ROC) value of 0.51. Participants rated their anxiety symptoms on a 4-point Likert scale, ranging from "Does not apply at all to me" to "Very often or frequently applies to me." For patients with coronary heart disease, the DASS helps determine the severity of anxiety and depression and identifies those requiring psychological support. Depression levels were assessed using the same DASS instrument, which measures aspects such as hopelessness, life devaluation, self-deprecation, and lack of interest in activities. The Indonesian version of the DASS has a Cronbach's alpha of 0.677, reflecting moderate reliability. Overall, the DASS is a valuable tool for both clinical and research settings, providing a standardized and culturally appropriate method for assessing and monitoring anxiety and depression among coronary heart disease patients in Indonesia.

Murottal hearing therapy is an Islamic-based intervention designed to alleviate spiritual distress, including symptoms of anxiety and depression, in patients. This study implemented the therapy for 15-20 minutes daily over three consecutive days to address the increasing prevalence of anxiety and depression among coro-

nary heart disease patients undergoing treatment. Conducted at Siti Khadijah Islamic Hospital in Palembang from March to July 2023, the research involved 55 participants divided into intervention and control groups. A quantitative quasi-experimental design was used to assess anxiety and depression levels in both groups before the intervention (pre-test). The intervention group received murottal hearing therapy from the first to the third day, followed by a post-test assessment on the fourth day. In contrast, the control group received standard treatment without murottal therapy and underwent a post-test evaluation on the fourth day. Participants in the intervention group were provided with MP3 players and earphones to listen to Surah Ar-Rahman recited by Muzamil Hasballah. The murottal recordings were played at 50 decibels to ensure listener comfort and maximize the therapy's positive effects. The earphones allowed patients to hear the murottal audio within a frequency range of 5 Hz to 22,000 Hz, aiming to influence brain wave patterns and effectively reduce anxiety and depression.

Results

Demographic and clinical characteristics of participants

Table 1 provides a comprehensive overview of the demographic and clinical characteristics of the participants. The average age of participants was 56 years in the control group and 58 years in the intervention group. The average duration of illness was ten months for the control group and nine months for the intervention group. In both groups, most participants were male, with 67.3% in the control group and 74.5% in the intervention group. Additionally, over half of the participants in both groups had low education levels, with 65.4% in the control group and 69.1% in the intervention group. A considerable proportion of respondents in both groups were unemployed, comprising 43.6% of the control group and 47.3% of the intervention group.

Anxiety and depression levels in control and intervention groups

Table 2 illustrates the anxiety and depression levels among participants. In the pre-test, severe anxiety was observed in 61.8% of the control group and 69.1% of the intervention group. After the post-test, severe anxiety persisted in most of the control group, at 54.5%. However, the intervention group experienced a significant anxiety reduction, with 52.7% of participants reporting only mild anxiety. Regarding depression levels, the pre-test revealed that more than half of the participants in both groups experienced severe depression, with 52.7% in the control group and 63.6% in the intervention group. After the intervention, most participants in the control group experienced moderate depression, at 69.1%. In contrast, the intervention group showed a substantial decrease in depression levels, with 65.5% of participants reporting only mild depression after the post-test.

Differences in anxiety and depression between the control and intervention groups

This study demonstrates a significant difference in anxiety levels between the control and intervention groups, with a p-value of 0.000 ($p < 0.05$). The Mann-Whitney test revealed that the average anxiety score was 80.76 in the control group, compared to 30.24 in the intervention group, indicating a substantial difference. Similarly, there was a significant difference in depression levels

between the two groups, also with a p-value of 0.000 ($p < 0.05$). According to the Mann-Whitney test results, the average post-test depression score was 77.75 in the control group, while the intervention group scored 33.25 (see Table 3).

Table 1. Demographic and clinical characteristics of participants in each group (N=55).

Characteristics	Control Group Mean (SD) n (%)	Intervention group Mean (SD) n (%)
Age (years)	56±8.967	58±9.211
Illness duration	10±8.328	9±7.854
Gender		
Male	37 (67.3)	41 (74.5)
Female	18 (32.7)	14 (25.5)
Education		
High	19 (34.6)	17 (30.9)
Low	36 (65.4)	38 (69.1)
Occupation		
Self-Employed	8 (14.6)	9 (16.4)
Employee	11 (20.0)	2 (3.6)
Trader	6 (10.9)	14 (25.4)
Teacher	6 (10.9)	4 (7.3)
Unemployed	24 (43.6)	26 (47.3)

Table 2. Frequency distribution of anxiety and depression levels of pre-test and post-test in the control and intervention groups.

Variable	Control Group n (%)	Intervention group n (%)
Anxiety level		
Pre-test		
Moderate	21 (38.2)	17 (30.9)
Severe	34 (61.8)	38 (69.1)
Post-test		
Normal	0 (0)	12 (21.8)
Mild	0 (0)	29 (52.7)
Moderate	25 (45.5)	14 (25.5)
Severe	30 (54.5)	0 (0)
Depression level		
Pre-test		
Moderate	26 (47.3)	20 (36.4)
Severe	29 (52.7)	35 (63.6)
Post-test		
Normal	0 (0)	5 (9.0)
Mild	2 (3.6)	36 (65.5)
Moderate	38 (69.1)	14 (25.5)
Severe	15 (27.3)	0 (0)
Total	55 (100)	55(100)

Table 3. Differences in anxiety and depression between the control and intervention groups.

Variable	Group	Mean post-test	p-value
Anxiety	Control	80.76	0.000
	Intervention	30.24	
Depression	Control	77.75	0.000
	Intervention	33.25	

Discussion

Patients with cardiovascular conditions, such as coronary heart disease, often experience significant spiritual distress that profoundly impacts their psycho-spiritual well-being. This distress is frequently driven by intense worry and fear, particularly related to the prospect of death, and can trigger a crisis manifesting as anxiety and depression.²¹ The presence of anxiety and depression resulting from spiritual distress can increase the risk of complications. These emotional states can activate involuntary physiological responses, part of the body's self-defence mechanisms. This activation can worsen existing health issues and lead to additional complications, highlighting the need to address both spiritual and emotional needs in the management of cardiovascular diseases.²²

Anxiety is a prevalent issue among patients with Coronary Heart Disease (CHD). This anxiety is often characterized by persistent worry and fear about the disease, along with physical symptoms such as trembling, unexplained sweating, respiratory issues, and weakness.²³ Research by Soyly *et al.*²⁴ reveals that a CHD diagnosis frequently triggers intense fear of a fatal heart attack or sudden death. Uncontrolled anxiety can severely affect a patient's quality of life by disrupting sleep patterns and worsening physical symptoms such as chest pain and shortness of breath. Furthermore, excessive anxiety can exacerbate the patient's physical condition by elevating blood pressure, causing unstable blood sugar levels, and reducing stress tolerance. Borji and Mousavimoghadam²⁵ also note that anxiety in heart patients often stems from a lack of understanding about the disease, which leads to increased worry and impaired coping skills.

Excessive and unresolved anxiety can lead to depressive responses.²⁶ Depression is a common issue among patients with CHD. Those suffering from depression related to their condition often feel they have lost their previous capabilities, experience sadness, lack motivation, and become pessimistic about their future. They may also feel powerless to return to their usual activities.²⁷ This is consistent with Najafi *et al.*,²⁸ who observes that a diagnosis of CHD can trigger feelings of sadness, hopelessness, loss of interest in daily activities, and worthlessness. Depressed CHD patients face a higher risk of severe health complications, including increased mortality and reduced overall quality of life. Additionally, depression can decrease a patient's motivation to adhere to treatment and make necessary lifestyle changes for managing heart disease. Thus, anxiety and depression are psychological factors that indirectly contribute to a decline in health quality.

When addressing patients' psychological issues, interventions often extend beyond pharmacological treatments to include non-drug approaches that address their holistic needs.²⁹ Non-pharmacological strategies may encompass relaxation techniques, distraction methods, and other therapeutic practices designed to provide comprehensive care. These approaches aim to alleviate psychological distress by addressing both mental and emotional aspects of well-being. By integrating these methods, healthcare providers can offer a more comprehensive and effective treatment plan that supports overall patient health and improves their quality of life.³⁰

In holistic care, nurses are crucial as primary facilitators in delivering and coordinating conventional and complementary patient therapies. They act as critical supporters throughout the recovery process, providing essential information about available treatment options and helping patients choose the approaches that best meet their needs and preferences.³¹ Additionally, nurses create a supportive environment, manage therapy sessions, and offer emotional support during treatment. Their active involvement in

holistic therapy ensures that patients receive comprehensive care, which enhances the effectiveness of recovery and optimizes the overall therapeutic experience.³²

Spiritual care is a crucial component of holistic support, focusing on recognizing and respecting the spiritual dimensions of patients. It involves offering emotional support, helping patients find meaning and purpose, and maintaining spiritual balance while facing health challenges.³³ This form of care often includes conversations about the patient's beliefs and values, allowing them to voice their concerns and reflect on their spiritual growth.³⁴ Spiritual well-being can significantly influence how patients cope with coronary heart disease and manage anxiety and depression. Thus, incorporating spiritual care into holistic treatment is essential, as it helps patients find calm and hope throughout their healing journey.³⁵

Spiritual care in Islam is a critical component of Islamic spiritual care interventions in nursing practice, emphasizing the vital role of spirituality in a patient's recovery and well-being. This approach is deeply grounded in religious teachings, highlighting the individual's relationship with Allah as a source of strength and peace. Practices such as worship, dhikr (remembrance of Allah), prayer, and reflection are central to this approach, aiming to strengthen faith, cultivate inner peace, and offer a profound understanding of life's purpose.³⁶ In healthcare, Islamic spiritual care extends beyond religious aspects to include moral values, ethics, and healthy social interactions, providing a comprehensive foundation for holistic patient care. By understanding and applying Islamic spiritual care principles, nurse practitioners can offer more effective and integrated support, enhancing patients' recovery experiences.³⁷

Islamic spiritual nursing practices, such as prayer and Quranic recitation (dhikr), are essential for enhancing patients' spiritual well-being. These practices help strengthen their connection with faith, provide emotional comfort, and promote inner peace, supporting emotional and spiritual recovery. Incorporating these practices into nursing care addresses the holistic needs of patients, improving their sense of purpose and tranquillity during the healing process.⁹ This study highlights significant differences in anxiety and depression levels among participants who received murottal auditory therapy, with p-values of 0.000 for both measures, indicating vital statistical significance. Similarly, other research has shown that music therapy can effectively reduce stress, anxiety, and depression in intensive care patients, emphasizing its value as a complementary treatment approach. These findings reinforce the effectiveness of integrating spiritual and therapeutic modalities into patient care to enhance emotional and psychological health.

Murottal refers to reciting Quranic verses with precise pronunciation (tajwid) and rhythmic delivery. Listening to murottal can bring a sense of tranquillity to the listener.³⁸ Ar-Rahman is a frequently used Surah in therapy, underscoring Allah SWT's blessings to His servants. This Surah is characterized by its straightforward language and elegant literary style, including a repetitive question asked 30 times. Surah Ar-Rahman fosters gratitude for Allah's blessings and acceptance of His will, emphasizing that ultimate healing from illness lies within Allah's power.³⁹

Murottal therapy, which involves listening to Qur'anic recitations with precise tajwid and soothing rhythms, significantly affects brain function, leading to reductions in anxiety and depression.⁴⁰ This therapy activates the brain's auditory system, especially the auditory cortex, and engages the parasympathetic nervous system to promote relaxation. By enhancing alpha wave activity, Murottal therapy fosters a state of calm that lowers cortisol levels,

the primary stress hormone associated with anxiety and depression.⁴¹ Additionally, the spiritual aspect of murottal therapy contributes to emotional well-being by instilling a sense of peace and purpose. This combined physiological and spiritual effect helps alleviate symptoms of anxiety and depression, promoting overall relaxation and a heightened sense of well-being.⁴²

Research by Ruby⁴³ indicates that Islamic spiritual care therapy using murottal significantly reduces anxiety and depression levels in coronary heart disease (CHD) patients, with reductions of 76.45% in anxiety and 81.5% in depression. This finding is supported by Hajiri *et al.*,⁴⁴ who reported up to an 84% decrease in depressive symptoms and an 87% reduction in anxiety among CHD patients receiving murottal therapy. Husna⁴⁵ further corroborates these results, noting that the mean depression score in the treatment group dropped to 11.09 (± 8.47) following the spiritual program, with statistical significance ($P < 0.001$). Additionally, Indrika⁴⁶ found that patients undergoing cardiac catheterization who listened to murottal had significantly lower anxiety scores compared to a control group. Studies by Moulai *et al.*⁴⁷ and Che Wan Mohd Rozali *et al.*⁴⁸ also support the effectiveness of listening to Quranic verses in alleviating mental disorders such as anxiety and depression. These findings suggest that a comprehensive, personalized approach to spiritual care with murottal, enhanced by supplementary modules, improves patients' understanding and engagement, thereby more effectively reducing anxiety and depression. Overall, Islamic spiritual care therapy with murottal appears to be a promising holistic approach for treating CHD patients and addressing their spiritual and emotional needs.

Listening attentively to murottal therapy has been shown to have a beneficial impact on individuals with cardiovascular disorders, such as CHD. This therapy promotes mental calmness, which helps reduce anxiety and depression in patients, ultimately influencing blood pressure, heart rate, heart rhythm, and respiratory rate. These results are consistent with the findings observed in the intervention group of this study, where murottal therapy led to significant reductions in anxiety and depression levels. The study confirms that murottal therapy is effective in alleviating anxiety and depression among patients undergoing CHD treatment. Given that anxiety and depression present significant challenges throughout the treatment journey for cardiovascular patients, murottal therapy is emerging as a valuable adjunct to pharmacological treatments. Nurses play a vital role in mitigating patient anxiety and depression, which can accelerate recovery.

However, this study has several limitations. First, the therapy is limited to patients diagnosed with coronary heart disease, which restricts its applicability to other conditions. Although murottal therapy helps calm individuals experiencing psychological stress, its benefits are not fully understood due to the limited duration of treatment, leading some patients to continue experiencing anxiety and depression. Second, the absence of randomization in the sampling process affects the generalizability of the findings to a broader population. Future research should investigate additional factors influencing the application of murottal therapy and explore its integration with various relaxation techniques to enhance spiritual connection, increase peace of mind, and improve overall recovery outcomes.

Conclusions

This study demonstrates a significant reduction in anxiety and depression scores among patients undergoing treatment for coronary heart disease after receiving murottal therapy. The notable

differences in scores between the control and intervention groups suggest that murottal therapy can be an effective complementary therapy when integrated into spiritual care approaches to alleviate these symptoms. In addition to reducing anxiety and depression, this non-invasive and cost-effective therapy enhances overall patient care by promoting a holistic approach and fostering deeper nurse-patient relationships. Regular assessment of anxiety and depression levels is essential for ensuring optimal treatment and accelerating recovery. Integrating murottal therapy as a standard practice could lead to more comprehensive nurse training programs emphasizing the importance of spiritual care in patient recovery and personalized care to achieve optimal health outcomes.

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