Effects of Religious Instrumental Music Therapy on Pain Level in Breast Cancer Patients

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ABSTRACT

Introduction: Breast cancer is a type of cancer that frequently occurs in women, characterized by hard, movable lumps with an irregular shape. The main complaint in cancer patients is pain. Pain management can be performed through instrumental music therapy. Instrumental music therapy provides a relaxing effect due to the balanced tempo and harmony of tones.

Objective: This study aims to analyze the impact of religious instrumental music therapy on pain levels in breast cancer patients.

Method: This research is a quantitative study employing a quasi-experimental design, specifically utilizing a pre-test post-test control group design approach. This study's population is made up of 183 breast cancer patients. The research was conducted in the chemotherapy room of RSUD Dr. H. Moh. Anwar Sumenep from September to November 2022. The sampling technique used is non-probability sampling with a purposive sampling method, based on inclusion criteria. A total of 54 participants were selected and allocated to the intervention group and the control group. The McGill Pain Questionnaire (MPQ) is used to measure pain. Data analysis is performed using the Wilcoxon statistical test with a significance level of p<0.05. Data analysis is carried out using SPSS 24 software.

Result: The results of the bivariate test analysis showed that the pain level in the experimental group significantly changed before and after receiving the religious instrumental music therapy intervention, with a p-value < 0.05. In contrast, the control group showed no significant change, with a p-value of 1.000, as no intervention was provided.

Conclusion: Religious instrumental music therapy has proven to be effective in reducing pain levels in breast cancer patients at RSUD Dr. H. Moh. Anwar Sumenep.

Keywords: breast cancer, instrumental music, pain

Introduction

The leading cause of death in the world is breast cancer. Breast cancer occurs due to abnormal growth, resulting in the formation of a lump in the breast (Kada et al., 2020), his cancer develops from the glands, ductal systems, or supportive tissue of the breast, particularly in the lobules responsible for delivering breast milk to the nipple (Irawan, 2018; Mustafa *et al.,* 2016; Olfah *et al.,* 2017). It is a malignant tumor that can develop in one or both breasts, typically appearing as a hard, movable mass with irregular shape (Olfah *et al.,* 2017).

In 2018, there were 2.09 million cases of breast cancer globally Breast cancer ranks fifth globally, accounting for 11.7% of cases with 2.3 million new diagnoses, while in Indonesia, breast cancer ranks first, making up 16.6% of the total 396,914 cancer cases (Indriyani et al., 2023). In East Java Province, in 2019, 0.5% of women were diagnosed with breast cancer (Dinkes Provinsi Jawa timur, 2020), with this figure rising to 1.8% in 2020. Sumenep Regency recorded 4,034 cancer cases in 2020, placing it 12th (Dinkes Provinsi Jawa Timur, 2021).

Pain is a common complaint often experienced by cancer patients (Endarto *et al.,* 2012) caused by nerve endings damage due to inflammation or swelling (Kurniawan *et al.,* 2019). Pain arises both from the tumor itself and from anticancer treatments. Typically, the pain experienced is chronic in nature (Halim & Khayati, 2020). One nursing intervention for pain management is music therapy (Alligood dalam Wurjatmiko, 2019). The suggested music therapy involves music with gentle, consistent, and soothing tones, such as instrumental music (Vahurina & Rahayu, 2021). Instrumental music is one genre used in this therapy (Antarika & Herawati, 2021; Ramirez *et al.,* 2018), as it has a relaxation effect that can alleviate or even heal pain, thanks to its balanced tempo and harmony (Suhartiningsih *et al.,* 2021).

Based on the explanation above, music therapy is effective in reducing pain, especially in breast cancer patients. This aligns with the findings of a study conducted by Kada et al (2020) which revealed changes in pain levels before and after the music therapy intervention. Therefore, the researcher aims to investigate the effectiveness of religious instrumental music therapy in reducing pain levels in cancer patients.

Objective

The aim of this study is to assess the pain level before and after prsoviding religious instrumental music therapy to breast cancer patients at RSUD Dr. H. Moh. Anwar Sumenep, as well as to analyze the impact of religious instrumental music therapy on the pain level of breast cancer patients at the hospital.

Method

This research is a quantitative study employing a quasi-experimental design, specifically utilizing a pre-test post-test control group design approach. Data collection was conducted from September to November 2022 in RSUD Dr. H. Moh. Anwar Sumenep, with a population of 183 adult patients diagnosed with breast cancer in the last three months. Sample size was calculated using paired numeric comparatives and accounting for a 10% dropout probability, resulting in 27 people per group, with a total sample of 54 individuals. These were divided into two groups: the intervention group (n=27), who received 15 minutes of religious instrumental music therapy, and the control group (n=27), who received no intervention. The sampling technique used is non-probability sampling with a purposive sampling method, based on inclusion criteria such as undergoing chemotherapy, having previously undergone

mastectomy, pain scale ≥4 before the intervention, stages II-IV, and being Muslim. The independent variable in this study is religious instrumental music therapy, while the dependent variable is the pain level. The McGill Pain Questionnaire (MPQ) is used to measure pain. The procedure starts with an initial trial using the pain questionnaire. If the results of the initial trial meet the inclusion criteria, the respondents are included in the research sample. Following the intervention, a post-test is conducted using the same questionnaire. Data analysis is performed using the Wilcoxon statistical test with a significance level of $p<0.05$. Data analysis is carried out using SPSS 24 software.

Result

The following are the characteristics of respondents in this study:

Table 1. Respondent Characteristics

Characteristics of Respondents	Intervention		Control	
	n	%	n	%
Gender				
Female	27	100.0	27	100.0
Religion				
Islam	27	100.0	27	100.0
Education				
No schooling	7	25.9	8	29,6
Elementary-Middle School	15	55.6	13	48,1
High School-Higher Education	5	8.5	6	22,2
Occupation				
Not working	7	25,9	8	29,6
Working	20	74,1	19	70,4
Marital Status				
Married	25	92,6	25	92,6
Not married	2	7,4	2	7,4
Cancer Stage				
Early stage (II)	11	40,7	16	59,3
Advanced stage (III-IV)	16	59,3	11	40,7
Family History				
Yes	1	3,7	1	3,7
No	26	96,3	26	96,3
Treatment				
Surgery and Chemotherapy	27	100	27	100
Age				
M±SD	49,26	8,300	48,70	9,215

In the intervention group, all respondents were female breast cancer patients (100%) and Muslim (100%). The majority of respondents had completed elementary to middle school education (55.6%), and most were employed (74.1%). A large proportion of the respondents were married (92.6%). The average age was 49.26 years, with a standard deviation of 8.300. Among the respondents, 16 individuals had advanced-stage breast cancer (III-IV) (59.3%) and had undergone surgery and chemotherapy (100%), with no family history of cancer (96.3%).

In the control group, all respondents were female (100%) and Muslim (100%). Similarly, most had low educational levels (48.1%) and were employed (70.4%). A majority of the respondents were married (92.6%) with an average age of 48.70 years and a standard deviation of 9.215. Sixteen respondents had early-stage breast cancer (II) and had also undergone surgery and chemotherapy (100%). Almost all respondents had no family history of cancer (96.3%).

Table 2. Pain Level Before and After Intervention

Pain Description	Intervention		Control	
	Pre (M±SD)	Post (M±SD)	Pre (M±SD)	Post (M±SD)
Sensory Description	19,04 ± 3,956	5,52 ± 3,203	18,22 ± 5,221	18,22 ± 5,221
Affective Description	4,48 ± 2,666	0,56 ± 0,974	5,00 ± 1,941	5,00 ± 1,941
Evaluative Description	1,96 ± 1,400	0,67 ± 0,555	2,22 ± 1.121	2,22 ± 1.121
Miscellaneous Description	8,26 ± 2,347	2,19 ± 1,570	8,81 ± 2,386	8,81 ± 2,386
Pain Intensity (PPI)	2,26 ± 0,447	0,81 ± 0,396	2,44 ± 0,698	2,44 ± 0,698

The level of pain in breast cancer patients is assessed across several domains, with the highest average pain being observed in the sensory domain for both the experimental and control groups. The greatest reduction in pain intensity for both groups was also observed in the sensory domain.

Table 3. The Effect of Intervention on Pain Levels

Variable	Group	p -value	Description
Pain Level (PRI)	Control	1,000	not significant
	Intervention	0,000	Significant

The results of the analysis of pain levels before and after the intervention in the experimental group showed a p-value of 0.000 (p < 0.05). This indicates that religious instrumental music therapy has an effect on pain levels in breast cancer patients. In contrast, the control group, which did not receive the intervention, showed a p-value of 1.000 (p > 0.05), indicating no effect on the pre-test and post-test values.

Discussion
The bivariate test results revealed a p-value < 0.05, indicating that music therapy has a significant impact on reducing pain levels in breast cancer patients. This is consistent with previous research by Komalawati (2021), which demonstrated a reduction in pain among lung cancer patients following music therapy. In this study, the average pain level before the intervention was 7.67, which decreased to 4.90 after music therapy. This further supports the effectiveness of music in pain relief.

Music therapy has the potential to stimulate endorphin release, contributing to pain reduction along with the activation of the parasympathetic nervous system. Additionally, norepinephrine and serotonin play a role in alleviating pain in cancer patients by modulating impulse transmission from the brain. Listening to music stimulates the limbic system, which releases phenylethylamine or neuroamine, substances that regulate the patient's impulses and mood. Music also activates the parasympathetic nervous system, promoting interaction

with the sympathetic system and altering brain waves into alpha waves, which induce a calming effect (Wurjatmiko, 2019).

In this study, instrumental music was used, which consists solely of musical instrument sounds (Wulansari *et al.,* 2019). Instrumental music therapy can alleviate pain, provide relief, and facilitate healing. This is due to the balanced tempo and harmony of the tones in the music (Suhartiningsih *et al.,* 2021). The specific type of instrumental music used was religious instrumental music, featuring the song *Al-I'tiraf*. Religious music, guided by spiritual teachings, fosters a deeper connection with Allah SWT for listeners (Rofiq, 2020). Religious instrumental music has a soothing effect, helps ease tension, and promotes calm thinking (Wulansari *et al.,* 2019). The violin, a stringed instrument that produces harmony when played with a bow, was used in this study as part of the instrumental music therapy (Widhyatama, 2012; Putri, 2017).

Previous studies have shown that Mozart's violin music therapy can reduce menstrual pain levels. Mozart's classical violin music offers soft and regular rhythms, characterized by the purity and simplicity of its sound. This music has rhythms, melodies, and high frequencies that stimulate the brain, enhancing creativity and motivation. Listening to Mozart's violin music can induce calmness, increase serotonin and endorphin levels, creating comfort and alleviating pain (Rangga *et al.,* 2021).

Medically, music therapy assists individuals in expressing emotions, positively influencing mood and emotional well-being, and fostering emotional connections. Music has a calming effect and can act as a natural analgesic. Research indicates that religious songs are a popular choice, with 30.43% of patients selecting them. Religious songs are especially suitable for patients with chronic diseases, like cancer, as they seek spiritual solace and closeness to God (Kurniawan *et al.,* 2019).

Religious instrumental music therapy is considered a spiritual form of therapy that can transform negative experiences into meaningful ones (Muhsinah, 2020). he combination of music and spiritual therapy is referred to as religious music therapy, which can support the healing process (Hidayat, 2021). As a spiritual intervention, this therapy helps reduce pain and improve the overall well-being of patients with terminal illnesses. It offers comfort, happiness, and a deeper sense of life's meaning (Djamaluddin et al., 2022).

Conclusion

Pain in cancer patients can be managed through religious instrumental music therapy. The findings of this study indicate that religious instrumental music therapy is effective in alleviating pain levels in patients. Listening to religious instrumental music helps induce a sense of calm, allowing the brain to diminish the pain experienced by the patient.

Conflict of interest

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and

used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

Authors' contribution

Each author makes an equal contribution to all parts of the research. All authors have reviewed and approved the final draft critically and are responsible for the index and similarity of the manuscript.

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