

Research Article

The Effect of Islamic Music Therapy for Reducing Pain in CKD Patients Undergoing Hemodialysis

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Abstract.

When patients with CKD are receiving hemodialysis, cannulation is frequently performed. For hemodialysis patients, recurrent pain during cannulation is a severe issue. Even though there have been many studies on music therapy, there are currently few on Islamic music therapy's effectiveness in easing cannulation pain. The study aimed to determine the effect of Islamic music therapy in reducing pain in CKD patients undergoing hemodialysis. This study used a pre-experimental design. 61 hemodialysis patients at Wava Husada Hospital were subjects of the study. They were split into two groups: the Islamic music therapy intervention group and the control group. In this study, non-probability sampling was conducted. Inclusion requirements included being Muslim, receiving hemodialysis for CKD, using AV fistula access, and not being in critical condition. Following the intervention, the NRS pain scale was used to assess the level of pain in each respondent. This study discovered that the control and Islamic music therapy intervention groups experienced different levels of discomfort. This study's P value was 0.001 (0.05) according to the Mann-Whitney statistical test. Based on the findings of this study, it can be said that using Islamic music therapy to treat hemodialysis patients with chronic kidney disease can help them feel less pain.

Keywords: Islamic music therapy, Pain, Hemodialysis

1. INTRODUCTION

CKD patients undergoing hemodialysis therapy will always be exposed to pain that comes from cannulation as an access to enter and exit the blood. This action has an uncomfortable effect due to the insertion of various sizes of needles which will enter the skin tissue and blood vessels, causing stimulation of nerve fibers and causing pain (1)

The Global Burden of Disease study (2017) results state that the prevalence of CKD globally is 9.1%, with approximately 700 million cases. In developed countries, the incidence of CKD is higher. Approximately 26 million adults suffer from kidney failure and millions more are at high risk reported in the United States (2). In Indonesia, the

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prevalence of people aged > 15 years diagnosed with CKD by doctors is 3.8% (3). The prevalence of the population in East Java diagnosed with CKD is 0.29% or 113,045 people. In Malang City itself, the number of CKD sufferers is currently estimated at more than 2,500 patients (4) and at Wava Husada Hospital itself, CKD patients undergoing hemodialysis are 112 patients.

The study results show that 70 patients undergoing hemodialysis stated that 58.5% of patients experienced moderate pain, 50% experienced intense pain, and 11.5% experienced mild pain during cannulation. Meanwhile, the other research stated that, on average, 33 patients undergoing hemodialysis therapy complained of pain with scale of 4-6 (5,6).

Pain during hemodialysis is one of the common problems of CKD patients, and often results in increased depression and decreased quality of life (7). Pain in patients undergoing hemodialysis will have an impact on anxiety and fear in undergoing hemodialysis. Anxiety and fear can reduce the patient's motivation to carry out each hemodialysis therapy session, decreasing the patient's quality of life (8).

Islamic music therapy is one of the religious music therapies that can be used to reduce pain. Islamic music therapy is a therapy that contains spiritual aspects (9). Islamic music therapy can be classified as spiritual care, service area developed directly from a holistic model (10). According to previous research, music therapy alone can reduce pain during cannulation. However, there are still few studies related to Islamic music therapy in treating cannulation pain in CKD patients undergoing hemodialysis in hospitals (11).

Based on the above background, researchers are interested in examining the effect of Islamic music therapy in reducing pain, especially in CKD patients undergoing hemodialysis at Wava Husada Kepanjen Hospital.

2. MATERIALS AND METHODS

Research design is very important in research because research design plays an important role in determining statistical tests to be used in research. There are several forms of research design in the experimental research method, including pre-experimental, true-experimental, factorial-experimental, and quasi-experimental. Pre-experimental research is an experimental design that is not serious because external variables will still affect the dependent variable. Several approaches can be used in the pre-experimental design, such as a one-shot case study, one-group pre-test-post-test, and intact group comparison. Intact-group comparison is a research design where

there will be one group but will be divided into two, namely the intervention group and the control group.

The sample in this study amounted to 61 patients, which will then be divided into two groups, 31 respondents in the intervention group and 30 respondents in the control group. The inclusion criteria in this study were 1) CKD patients undergoing hemodialysis, 2) Using AV fistula access, 3) Muslim, 4) In non-critical condition, 5) Willing to be a respondent. The instrument used in this study was the SOP (Standard Operating Procedure) of Islamic music therapy which was listened to with earphones. The pain instrument is the NRS pain scale (Numeric Rating Scale) with a range of 0 (no pain) to 10 (unbearable pain) in the form of an NRS pain scale observation sheet.

3. RESULTS

Table 1 shows that the control group who was not given Islamic music therapy experienced pain in a range of 4-10 with a scale of 4 of 3.33%, a scale of 6 of 66.66%, a scale of 7 of 23.33%, a scale of 8 of 3.33. %, and a scale of 10 of 3.33%. At the same time, the Islamic music therapy intervention group experienced pain in the range 0-5 with a scale of 0 of 9.67%, scale 1 of 12.9%, scale 2 of 32.25%, scale 3 of 19.35%, scale 4 of 22.58%, and a scale of 5 of 3.22%.

Hypothesis testing in this study used the Mann-Whitney test. Based on the Mann-Whitney statistical test, it can be concluded that the significance value or P value in this research is 0.001, which is <0.05. So the results obtained were significant differences between the intervention group who were given Islamic music therapy and the control group who were not given Islamic music therapy.

4. DISCUSSION

The pain scale most often felt in the control group was 6. While in the intervention group, the pain scale most frequently felt by the respondents was the pain scale 2. This shows that the pain scale in the intervention group is lower than the control group.

Pain that arises in the subjects in this study is pain that arises due to tissue damage, namely when inserting a needle into a blood vessel, either an artery or a vein, causing the cells to secrete chemicals such as histamine, bradykinin, and potassium which then activate nociceptors to react with a threshold—and then captured by the delta nerve fibers. After that, the impulse goes to the dorsal horn of the spinal cord, releasing neurotransmitter substances that result in synaptic transmission. After that, the impulses are

TABLE 1: Distribution of Pain Scale Respondents.

| NRS Scale | Control Group | | Intervention Group | | P value |
|--------------|---------------|-------------|--------------------|-------------|---------|
| | n | f | n | f | |
| 0 | 0 | 0% | 3 | 9,67% | 0,001 |
| 1 | 0 | 0% | 4 | 12,9% | |
| 2 | 0 | 0% | 10 | 32,25% | |
| 3 | 0 | 0% | 6 | 19,35% | |
| 4 | 1 | 3,33% | 7 | 22,58% | |
| 5 | 0 | 0% | 1 | 3,22% | |
| 6 | 20 | 66,66% | 0 | 0% | |
| 7 | 7 | 23,33% | 0 | 0% | |
| 8 | 1 | 3,33% | 0 | 0% | |
| 9 | 0 | 0% | 0 | 0% | |
| 10 | 1 | 3,33% | 0 | 0% | |
| Total | 30 | 100% | 31 | 100% | |

transmitted to the spinal cord, limbic system, thalamus, sensory cortex, and association cortex (9). Therefore, we need pain management either with drugs (pharmacology) or without drugs (non-pharmacological). Music therapy is one of the non-pharmacological techniques nurses can use to reduce patient pain (12).

The results in this study show the same results as other studies, that pain due to stabs can be reduced by music therapy. During the research, the respondents looked comfortable and peaceful. Feelings of comfort can stimulate the body to produce amino acids that affect binding to opiate receptors. These opiate receptors can provide analgesic effects or endorphins (13). Because pain is objective, there will be differences in the pain scale when giving music. Several factors affect pain level, including age, gender, culture, the meaning of pain, attention, anxiety, fatigue, previous experiences, coping styles, and social family support. In addition, receiving everyone’s voice can also affect pain (14).

Music therapy is one of the effective therapies for patients who experience pain. Music can provide a sense of comfort and distraction effect and increase tolerance to pain. Music can also reduce anxiety and fear, which can increase pain reactions. Music diverts the patient’s attention to a pleasant atmosphere. This can trigger the body to release endorphins which produce a palliative effect (15). Music can also trigger the body to release endorphins. Endorphins are hormones that can trigger a feeling of relaxation and calm. Endorphin hormones can also trigger the midbrain to secrete gamma amino butyric acid (GABA), inhibiting the transmission of electrical impulses from one neuron to another by neurotransmitters in the synapse. The midbrain secretes enkephalins and

beta-endorphins. These substances can cause an analgesic effect, eliminating pain neurotransmitters in the brain's somatic sensory perception and interpretation center, and the effect can appear as reduced pain (16). Music therapy is a form of sensory stimulation that creates a sense of comfort related to the type of music and can be accepted by everyone because it does not require heavy brain work (17).

Islamic music therapy is music therapy that contains Islamic spiritual aspects. Islamic music that calms and makes the feeling closer to God has a fundamental difference, especially in the lyrics. Islamic music lyrics describe human relations who crave God's love and forgiveness. The lyrics and chants of Islamic music can reconcile the heart, which makes the feeling jolted to increase faith. Islamic music therapy can physiologically make individuals calm. This is because the Islamic music that is listened to will affect the impulses that will be sent to the amygdala to determine the type of individual emotions (calm, patient, not hopeless, optimistic, etc.) (18)

Music therapy has a physiological effect on the body by reducing stress, pain, and anxiety (Utomo & Santoso, 2013). In addition, music is also effective in reducing heart rate, blood pressure, and respiratory frequency and can relax and reduce pain (19). Music is effective in reducing anxiety and stress levels felt by hemodialysis patients. In some studies, the positive effect of music therapy can be a reduction in pain and anxiety (20).

Music with Islamic, religious, or spiritual nuances has been proven to be used for music therapy. Spiritual and sacred music can bring patients a deep feeling of peace and increase spiritual awareness. Music can be very useful in helping patients cope and release pain (21). Islamic music therapy is useful in overcoming pain because it can increase the release of endorphins, which can provide an analgesic effect (22).

The effectiveness of music therapy, especially Islamic music therapy, proves that music therapy can be used as non-pharmacological therapy in overcoming pain. Patients like music-related activities such as playing or listening to music, so nurses use music therapy creatively. Compared to other medical professionals, nurses who spend a lot of time with patient should be able to provide the best interventions for patients, especially in dealing with pain experienced by patients (23).

5. CONCLUSION

Islamic music therapy can reduce pain during cannulation in hemodialysis patients. Releasing hormones that provided a calming effect and added Islamic aspects can make hemodialysis patients calm and comfortable. This study is expected to be a

reference and reference for developing research related to pain in patients undergoing hemodialysis.

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