

## ***The Effect of Music Therapy on Anxiety in Hemodialysis Patients with Kidney Failure: A Case Report***

Hunain Suci Kamila<sup>1\*</sup>, Arina Maliya<sup>2</sup>, Puji Kristini<sup>3</sup>

<sup>1</sup> Nursing Profession Program, Faculty of Health Sciences, University of Muhammadiyah Surakarta, Central Java, Indonesia.

<sup>2</sup>Department of Palliative Nursing, University of Muhammadiyah Surakarta, Kartasura 5712, Central Java, Indonesia.

<sup>3</sup>Hemodialysis Nurse, Pandan Arang Hospital Boyolali, Central Java, Indonesia.

\*Correspondence : [hunainsuci@gmail.com](mailto:hunainsuci@gmail.com)

**Abstract:** *Chronic kidney failure is a health problem as a result of damaged kidney function. Newly diagnosed patients who have to undergo long-term hemodialysis often feel worried about survival, the amount of dialysis time to the body's reaction when undergoing hemodialysis. This can create inner conflict, frustration, guilt to severe anxiety. The purpose of this case study is to determine whether there is an effect of music therapy on anxiety in patients undergoing hemodialysis with chronic kidney failure. The research method used in this study was descriptive quantitative with case studies with a total of 7 patients as respondents. The results of the case study showed anxiety in patients undergoing hemodialysis at the hospital after being given music therapy. From a total of 7 respondents there were 3 respondents experienced normal anxiety, 2 respondents experienced mild anxiety and 2 respondents experienced moderate anxiety. These results were obtained from the administration of an anxiety disorder at the last meeting using DASS 42. Questionnaires were given to respondents 2 times in the first week before music therapy and the last two weeks after music therapy was carried out. The conclusion in this study showed that there was an effect of giving music therapy to patients undergoing hemodialysis with chronic kidney failure.*

**Keywords:** *Therapy Music, Anxiety, Hemodialysis, Chronic Kidney Failure*

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### **INTRODUCTION**

Chronic Kidney Failure (CKD) is a structural or functional abnormality in the kidneys that lasts at least 3 months, structural abnormalities that can be detected through laboratory examinations (examination of albuminuria, urine sediment, electrolyte abnormalities due to kidney), histological examination, imaging or history of kidney transplantation, impaired function kidney with glomerular filtration rate (GFR) <60 ml/min/1.73 m<sup>2</sup> (Gliselda, 2021). Chronic Kidney Disease (CKD) is a health problem with an increasing incidence of kidney failure and is predicted to continue to increase which has received a poor prognosis and high costs. In Indonesia, kidney disease care is the second largest health financing provider after heart disease.

The prevalence of chronic kidney disease sufferers reaches 30 million people or 15% of the adult population and 96% of the population is not aware that there has been mild kidney function damage (Centers for Disease Control and Prevention, 2021). CKD in Indonesia ranks the second largest in the use of health insurance after heart disease. There were 30,554 patients who were actively undergoing hemodialysis throughout 2015, most of which were due to CKD (RI, 2020). According to Kementrian Kesehatan RI (2020), the prevalence of CKD in Central Java is 0.3%, meaning that it is above the national

prevalence (0.2%), Boyolali is an area that has a chronic kidney failure prevalence rate of 0.1% with this figure, Boyolali district is ranked 22nd in Central Java Province. In Pandan Arang Hospital, Boyolali, 110 people suffered from chronic kidney failure who underwent hemodialysis in May 2022.

Hemodialysis (HD) is an action taken to replace kidney function (Naryati & Nugrahandari, 2021). Hemodialysis is the most commonly used therapeutic intervention for patients with end-stage renal disease. Although hemodialysis is generally a safe procedure, complications associated with hemodialysis therapy are common. The most commonly associated complications include hypotension, muscle cramps, nausea and vomiting, headache, pruritus, fever, chills, depression, sleep problems and fatigue, pain and anxiety. (Raja & Seyoum, 2020). Patients requiring long-term hemodialysis are often concerned about unpredictable symptoms and disease. The amount of time required for dialysis and doctor visits and chronic pain can create conflict, frustration, guilt and depression (Tanto & Hustrini, 2020). One of the factors that influence compliance is self-efficacy. Self-efficacy is related to expectations of one's ability to overcome challenges or illness conditions faced, and expectations of self-ability for skilled behavior, as well as expectations of oneself to be able to produce positive life changes. Patients in this case can undergo treatment, follow the right diet, and carry out lifestyle changes in accordance with the recommendations of health services (Ayunarwanti & Maliya, 2020).

Chronic kidney failure patients undergoing hemodialysis will experience anxiety caused by various stressors, including the experience of pain in the stabbing area when starting hemodialysis, financial problems, difficulty in maintaining work problems, lost sex drive, depression due to chronic illness and fear of death. (Brunner, 2016). In kidney failure patients who have often done hemodialysis the level of anxiety is lighter, in contrast to kidney failure patients who are undergoing hemodialysis for the first time will experience higher anxiety, this is because the longer a person undergoes hemodialysis, someone will be more adaptive to the device/ hemodialysis unit. Anxiety that is not handled can lead to irrational behavior, conflict, disobedience, fear, inability to carry out daily activities and feelings of fear of death. (Damanik, 2020).

Music is a tool that is very useful and easy to obtain. Music can calm, lift the spirit, make others sad and others. By learning different types of music and feeling the effects of certain music on the body, a person can effectively choose music when he needs it. Moderate frequency (classical music) can affect emotions because classical music can relax the brain. (Francis, 2013).

Research conducted by Jalali (2021) regarding instrumental music on anxiety in patients undergoing hemodialysis showed a positive effect of instrumental music in reducing anxiety and it is recommended that this therapy be used as a nursing method to reduce anxiety in hemodialysis patients. Based on research Astuti (2020) there is an effect of piano instrumental music therapy on the stress level of patients with chronic kidney failure with a comparison of pre-test and post-test patients in the intervention group using the Wilcoxon test with  $p$  value = 0.000 ( $p < 0.05$ ) meaning there is a change in the stress level of patients with chronic kidney failure with hemodialysis after receiving piano instrumental music therapy.

The type of music used in music therapy can be adjusted to the wishes, such as classical music, instrumental, slow music, orchestra, jazz, dangdut, pop rock, keroncong and other modern music. Instrumental music is music at the level and physical level that occurs when the sound of music (instrumental and vocal) can be heard by humans which makes a person's body, mental and mind healthier (Sariati et al., 2019). Research conducted by Kim & Jeong (2021) revealed that listening to patient-selected music reduced levels of pain and anxiety during vascular access puncture. Regarding the state of anxiety, the experimental group had a significantly lower score than the control group. Therefore according to this study music can be included as a new clinical intervention to reduce pain and anxiety.

Based on the results of the analysis conducted at the hemodialysis unit of Pandan Arang Hospital Boyolali in June 2022, the results of interviews and distribution of anxiety questionnaires obtained a total of 7 respondents who experienced anxiety with the results of the interview the complaints felt such as: dizziness, headache, worried about the side effects of hemodialysis, feeling tense, sweating, heart palpitations. This continues to be felt while undergoing hemodialysis therapy, pain at the time of

needle prick, uncertainty about healing and fear of death. Thus, researchers are interested in implementing evidence-based music therapy to reduce the anxiety experienced by some of these patients.

## METHODS

The research design was descriptive quantitative with case study. The population in this study were all 138 patients who had dialysis in the hemodialysis room at Pandan Arang Boyolali Hospital. The sampling technique was accidental sampling with a total sample of 7 patients. The inclusion criteria for this study were patients with chronic kidney failure in the hemodialysis room who experienced anxiety, patients with hemodialysis duration less than 1 year, patients on a routine schedule of 2 times a week, the patient has no hearing loss and patients who are willing to be respondents. This case study uses the Dass 42 instrument developed by Lovibond in 1998.

Before doing music therapy researchers must explain in advance about the purpose, how it works and the timing of music therapy. After that if the patient gives consent to be a respondent then the respondent contracts for 2 weeks to fit the research schedule. The researcher will give the DASS 42 questionnaire regarding anxiety with 14 statements regarding the condition of the respondent at that time. If the result is experiencing anxiety, music therapy will be carried out after filling out the questionnaire. Before doing therapy, you should ask the respondent whether the position is comfortable, if you have prepared tools to use during therapy. Researchers used instrumental type music therapy using cellphone media and headsets, music therapy was carried out for 20-30 minutes at a volume of 70 decibel (dB). Each therapy is carried out 2 times a week for 2 weeks. Then after the instrumental music therapy at the last week's meeting a questionnaire will be given again to measure the respondent's anxiety about the music therapy that has been given for 2 weeks. In total, the questionnaire was given to respondents 2 times in the first week before music therapy and the last two weeks after music therapy was carried out.

## RESULTS

This research was conducted at Pandan Arang Boyolali Hospital, precisely in the Hemodialysis room. The Hemodialysis Room at this Hospital has 23 hemodialysis machines complete with beds and patient privacy sheets. The hemodialysis room has a schedule of 2 shifts, namely morning and afternoon from Monday to Saturday. Characteristics of respondents describe age, gender, duration of HD and pre-post scores of anxiety levels that have been carried out.

Table 1. Demographic Data and Pre Post Anxiety Level Score

R	Age	Gende r	Old HD	Anxiety Level		Conclusion
				Pre	Post	
R1	21	M	8 month	9 (Mild)	6 (Normal)	Decrease
R2	40	F	10 month	14 (Moderate)	9 (Mild)	Decrease
R3	43	M	8 month	13 (Moderate)	8 (Mild)	Decrease
R4	55	F	4 month	25 (Awfully)	13 (Moderate)	Decrease
R5	29	F	5 month	25 (Awfully)	12 (Moderate)	Decrease
R6	53	F	2 month	7 (Normal)	3 (Normal)	Decrease
R7	60	M	3 month	10 (Moderate)	2 (Normal)	Decrease

From the table above, it can be seen that there are 7 respondents with ages ranging from 21-60 years, male and female, having differences in the length of hemodialysis in the hospital. In the table

above there are also scores of pre and post anxiety levels, then the final conclusion is whether there is an effect of giving music therapy to patients.

Anxiety disorders can occur at any age, are more common in early adulthood. Most occur at the age of 21-40 years. Early adult patients have a longer remaining life span than the elderly. In this life span, adult patients still think about careers, friendships, personal relationships with the opposite sex and the future. The things that they should be able to achieve as adults can become obstacles due to undergoing hemodialysis. In addition, when the patient is diagnosed with chronic kidney failure and has to undergo routine hemodialysis at the hospital, all life plans are hampered, such as not being able to carry out strenuous activities at work or even being able to stop working. This reason causes anxiety for patients undergoing hemodialysis (Al Husna et al., 2021).

The characteristics of the respondents in this case study are male and female. The difference between men and women is that men tend to use energy drinks which in fact can cause hypertension, diabetes mellitus, which are risk factors for chronic kidney failure. Not only men but women can also have chronic kidney failure based on previous research which states that unhealthy lifestyles such as consuming fast food, being too busy which makes stress, drinking coffee and rarely drinking water so that these bad habits can lead to bad habits. risk of kidney damage. In general, patients with chronic diseases such as chronic kidney disease, men or women will show emotions of tension, sadness, suffering, weakness and lack of enthusiasm (Al Husna et al., 2021).

Hemodialysis is the most common renal replacement therapy in Chronic Kidney Disease patients to help prolong the patient's life. Hemodialysis carried out for a long time, routinely and forever can cause uncertainty, resulting in patients experiencing anxiety. In research Al Husna et al (2021) states that the longer the patient undergoes HD, the lower or lighter the patient's level of anxiety. This can happen because patients who have been undergoing HD for a long time are increasingly able to adapt to the HD machine and process so that their anxiety level is low. Chronic illness and long-term treatment as experienced by HD patients will force patients to change daily habits in life that trigger psychosocial stress such as anxiety, emotions, fear, anger and loss of hope. The longer the patient undergoes hemodialysis, the more knowledge and experience gained and more adaptive to stressors. However, the longer undergoing HD can also mean uncertainty regarding the patient's condition which can get better or worse.

## DISCUSSION

The results of a case study conducted 4 times in 2 weeks showed that there was a change before and after the music therapy intervention on the level of anxiety in patients undergoing hemodialysis with chronic kidney failure at Pandan Arang Hospital Boyolali. This case study had 7 respondents who had previously been given a questionnaire using DASS 42 to assess patient anxiety. After seeing the results, 7 respondents were given the same music therapy, namely instrumental music for 20-30 minutes using mobile phones and headsets. Then after 4 meetings, a re-assessment was carried out by filling out the DASS 42 questionnaire.

Based on the case study before the intervention of providing music therapy there was 1 respondent (R6) who experienced normal anxiety, then there was 1 respondent (R1) who experienced mild anxiety, then there were 3 respondents (R2, R3, R7) who experienced moderate anxiety and 2 respondents (R4 and R5) experienced very severe anxiety. After being given the music intervention, there was a decrease in anxiety level scores in 7 respondents, including 3 respondents (R1, R6, R7) who experienced a decrease, namely normal anxiety, then there were 2 respondents (R2 and R3) experiencing mild anxiety and 2 respondents (R4 and R5) experienced moderate anxiety.

Based on table 1. above, it was found that the respondent (R1) before the intervention of giving music therapy experienced mild anxiety then after being given music therapy the score changed from 9 mild anxiety to 6, namely normal anxiety. In the interview session, the patient said that recently his body was no longer weak and lethargic. Even at home, if the respondent is bored, the respondent listens to his favorite music. In this case, anxiety can be minimized by increasing rest, consuming nutritious food and doing activities that you like. This is in line with research conducted by Hagemann et al (2019)

showed that the patients experienced a significant reduction in anxiety symptoms and cited intervention with music therapy as an effective option in the treatment and prevention of anxiety symptoms and improving the quality of life of HD patients.

Based on table 1. above, it was found that 2 respondents (R2) before the intervention of giving music therapy experienced moderate anxiety then after being given music therapy their score changed from 14 to 9 which showed a decrease to mild anxiety. Then the respondent (R3) also before the intervention of giving music therapy experienced moderate anxiety then after being given music therapy the score changed from 13 to 8 which showed a decrease to mild anxiety. This is in line with research conducted by Hidayah et al (2021) who said that music therapy was an effective approach for managing symptoms of fatigue and anxiety in patients undergoing hemodialysis. During dialysis, music therapy can be performed on patients supported by facilities and monitored by nurses.

Based on table 1. above, it was found that 2 respondents (R4) before the intervention of giving music therapy experienced very severe anxiety then after being given music therapy their score changed from 25 to 13 which showed a decrease to moderate anxiety. Then the respondent (R5) also before the intervention of giving music therapy experienced very severe anxiety then after being given music therapy the score changed from 25 to 12 which showed a decrease to moderate anxiety. This is in line with research conducted Lina et al (2020) showed that before being given music therapy from 15 patients there were 12 patients experiencing severe anxiety after being given music therapy 11 patients experiencing severe anxiety to moderate anxiety. This study shows that there is an effect of listening to music in reducing anxiety levels during hemodialysis.

Based on table 1. above, it was found that 1 respondent (R6) before the intervention of giving music therapy experienced normal anxiety then after being given music therapy the score changed from 7 to 3 which remained the same but was still in the normal anxiety range. This is in line with Nababan (2021) which shows an increase in the quality of life before and after the provision of instrumental music. In this case study, it can be seen that a decrease in anxiety in general can improve the quality of life for patients undergoing hemodialysis routinely in the hospital.

Based on table 1. above, it was found that 1 respondent (R7) before the intervention of giving music therapy experienced moderate anxiety then after being given music therapy the score changed from 10 to 2 which showed a decrease to normal anxiety. This is in line with research conducted by Sagala et al (2020) which shows that there is an effect of dangdut music therapy on the anxiety level of patients with chronic kidney failure. The results of various studies from several journals that say so are expected to be implemented as an alternative treatment that can overcome the anxiety level of patients with chronic kidney failure in undergoing hemodialysis therapy in addition to pharmacological treatment.

According to Melo et al (2018) the results of the study found statistically significant differences between groups of anxiety experienced during hemodialysis sessions. The experimental group showed a statistically significant decrease in anxiety scores as indicated by blood pressure, heart rate, respiratory rate after listening to music. This is in line with research Kim & Jeong (2021) who also demonstrated that listening to patient-selected music reduced levels of pain and anxiety during vascular access puncture. Regarding the state of anxiety, the experimental group had a significantly lower score than the control group.

## CONCLUSION

Anxiety in patients undergoing hemodialysis is influenced by the characteristics of age, sex and duration of HD. The thing that is often felt by patients with chronic kidney failure is anxiety when undergoing hemodialysis. Then from various previous studies there are various therapies to reduce anxiety, ranging from aromatherapy therapy to music therapy. Music therapy has been shown to reduce anxiety, ranging from mild anxiety to very severe anxiety. In this study it can also be concluded that anxiety can decrease when music therapy is carried out with different characteristics of respondents. Suggestions for clients, music therapy can be an option to overcome anxiety while undergoing hemodialysis. From the results of research, music therapy can reduce or eliminate anxiety.

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