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Article

Reducing Depression with Classical Music Therapy in Chronic Kidney Failure Patients Undergoing Hemodialysis

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ABSTRACT

Background: Chronic Kidney Failure problems during hemodialysis may include depression. Depression refers to the mental, thought, feeling, and behavioral problems of patients. The causes of depression include genetics, physical disease, lifestyle, and drugs. One of the therapies to relieve depression is music therapy. This research determines the influence of music therapy to relieve the depression levels of chronic kidney failure patients with hemodialysis. The applied method was quantitative with a quasi-experimental design and one group pretest-posttest. The samples consisted of 45 respondents taken by accidental sampling. The applied instruments were BDI and the music therapy SOP. All instruments were examined in terms of validity, reliability, and expert judgment. The statistic test applied a non-parametric Wilcoxon test. The results showed the influence of classical music therapy and the relieved depression levels of chronic kidney failure patients with hemodialysis. The obtained p-value is 0.000, lower than 0.05. The researcher concluded the implementation of classical music was effective to relieve the depression symptoms of chronic kidney failure patients with hemodialysis. The researcher suggests developing a combined classical music therapy to relieve depression in chronic kidney failure patients. The researcher suggests the implementation of intervention and control groups to compare the significance of the results.

I. INTRODUCTION

Chronic renal failure is a progressive and irreversible disorder of kidney function and results in the body's metabolism failing to maintain fluid and electrolyte balance, resulting in an increase in urea (Sinurat et al., 2022). According to data from the World Health Organization (WHO), chronic kidney failure causes the deaths of 850,000 people every year (Agustiani et al., 2020). Patient those with chronic kidney failure will experience severe kidney function damage and be difficult to help (Sinurat et al., 2022). To be able to maintain the survival of chronic kidney failure patients, therapy using hemodialysis is needed (Haryanti & Nisa, 2015). Therapy Hemodialysis cannot cure disease but can prolong life span. Hemodialysis therapy for chronic kidney failure patients is carried out 1 or 2 times a week and for at least 3 months continuously (Wiliyanarti & Muhith, 2019).

Chronic kidney failure can cause the patient's mental health to decline due to changes in psychological conditions, quality of life and social status, so that the impacts arising from this condition include depression (Handayani et al., 2017); (Wakhid et al., 2019). Depression that cannot be treated will have negative impacts, namely suicidal ideation, social isolation, loss of energy, and sleep disorders (insomnia). Depression is a disease that often appears, especially in chronic disease patients, and one of them is found in patients chronic kidney failure (CKD) (Mardiyanti & Prasetyo, 2012) (Musthafa et al., 2019). One therapy that is often used to reduce depression is classical music, because classical music can generate alpha brain waves which can cause a feeling of relaxation so that the individual's behavior will become calm and can reduce the impact of depression (Suidah & Agus Cahyono, 2015).

Music therapy is a therapy that can make a person more relaxed with the rhythm of songs that are widely accepted by listeners. Apart from the effect of reducing depression levels, music therapy can reduce depression levels in patients (Astuti, 2018). The music chosen is a type of international classical music such as *Beethoven.* Providing music therapy with a tempo of 40-80 beats per minute or with a slow-medium tempo and a volume of 60 – 70 *desible* (Dhaiya, 2019). Music can make a happy mood and invite someone to sing along. Music therapy can also process physical, emotional, mental and spiritual aspects of therapy, and can improve and/or maintain their well-being. Music therapy aims to express feelings that influence mood positively and reduce levels of depression (Ismerini, 2022).

II. METHODS

This research design uses design *As an experiment* with a one-group pre-post test research design without control group (Suhron, 2024). The questionnaire used in this research is *Back Depression Inventory* (BDI). This BDI questionnaire has been tested for validity with a calculated r range of 0.363 – 0.980 which is greater than the r table (0.3610) and this reliability value is in accordance with the BDI with a

Cronbach's alpha of 0.753 which is more than 0.6, close to 1 so it is declared to have a reliability value high which indicates that (BDI) is reliable to use (Ruza, 2017).

The intervention given to respondents was classical music therapy. Providing this intervention uses an SOP that has undergone expert testing and is declared suitable for use. The statistical test used is the Wilcoxon test.

III. RESULT

Table 1.

Respondent characteristics based on age and gender

Age	Frequency (f)	*Percent (%)*
Early adulthood 26-35 years	4	8.9
Late adulthood 36-45 years	9	20.0
Early old age 46-55 years	9	20.0
Late old age 56-65 years	23	51.1
Man	24	53.3
Woman	21	46.7
Total	45	100

This is because older people have a greater risk of chronic kidney failure than younger people. The older you get, the kidneys cannot regenerate new nephrons, so that when kidney damage occurs or the aging process occurs, the number of nephrons decreases. According to (Afifah, I., & Sopiany, 2017) states that in old age there is a progressive decrease in the glomerular filtration rate of up to 50% of normal, there is a decrease in the ability of the kidney tubules to reabsorb and concentrate urine. A decrease in the ability to empty the bladder completely increases the risk of infection and obstruction and a decrease in fluid intake which is a risk factor for kidney damage.

The results of this research are in line with research conducted by (Rachmawati & Marfianti, 2020) which states that men with chronic kidney failure occur most frequently in men, namely 64.8%, while in women it is found at 35.2%. This is because men's lifestyles are worse than women's lifestyles.

Table 2

Data on levels of depression in chronic kidney failure patients before

Depression category	Frequency	Presentation
Light	17	37.8

Currently	28	62.2
Total	45	100.0

Table 3
Data on levels of depression in chronic kidney failure patients before

Depression category	frequency	Presentation
Not depressed	22	48.9
Light	14	31.1
Currently	9	20.0
Total	45	100.0

Based on Table 2 and Table 3, it was found that out of 45 respondents, it was known that depression before being given music therapy, namely the highest data was mild depression, 17 respondents (37.8%), moderate depression 28 respondents (62.2%). After being given music therapy, there were mild depression 14 (31.1%), moderate depression 9 (20.0%), no depression 22 (48.9%).

Table 4
The effect of music therapy on reducing the level of depression in chronic kidney failure patients undergoing hemodialysis

Variable	N	Mean	P-Value
Negative Ranks	41	23.79	
Positive Rank	3	4.83	0.000
Ties	1		
Total	45		

Based on table 4, it can be concluded that there is an influence of music therapy intervention on the level of depression in respondents, with a value of sig *P-Value*< 0.05 then Ha is accepted and Ho is rejected. So it can be concluded that there is an effect of providing classical music therapy on reducing the level of depression in chronic kidney failure patients undergoing hemodialysis.

IV. DISCUSSION

Levels of Depression in Chronic Kidney Failure Patients Before Being Given Classical Music Therapy

The majority of respondents had a moderate level of depression because the respondents had been able to adapt to hemodialysis. One respondent stated that he was comfortable with hemodialysis so that when given the questionnaire the majority of respondents did not experience symptoms of depression. Respondents who had moderate and mild levels of depression were because the respondents looked tense and not enthusiastic.

In kidney failure sufferers, a weakened body condition and dependence on dialysis machines throughout their life will cause the sufferer to be required to adapt continuously throughout their life. These feelings can cause feelings of pressure and discomfort and can even lead to mental disorders such as depression. Factors that influence the occurrence of depression are physical factors and psychological factors. Antidepressant drugs, such as *monoamine oxidase inhibitors* (MAOI), *selective serotonin reuptake inhibitors* (SSRI), and *tricyclic antidepressant* (TSA), however, the use of antidepressant drugs has side effects, namely digestive and cardiovascular disorders (Priastana et al., 2016). There are other interventions to reduce depression including progressive and autogenic muscle relaxation, music therapy, *guided imagery,* virtual reality, and mindfulness training (Hermanto, 2020).

Data on Depression Levels in Chronic Kidney Failure Patients After Being Given Classical Music Therapy

According to (Yamamoto, 2003) music therapy will reduce the release of catecholamines into the blood vessels, so that the concentration of catecholamines in plasma becomes low. This causes the body to relax, the heart rate decreases, and provides calm. This research is supported by the theory of Ayu Fitriya Rusanto (2009) which states that the level of depression after being given music therapy, most of the respondents experienced a decrease in the level of depression. with tilapia *P-value* 0.000 p value <0.05 means there is a change in depression scores before and after music therapy in chronic kidney failure patients undergoing hemodialysis. Because listening to music you like can create a happy atmosphere, the mind becomes calm, and can provide encouragement to the tired soul of the music listener. Using music therapy has fewer side effects and music therapy has advantages such as not being expensive and being more practical, when compared to drugs.

This is in accordance with research (Astuti, 2018) which states that providing music therapy has decreased levels of depression. Music is also a therapeutic tool, namely affecting organ systems. Music is able to activate memories stored in the limbic system and influence the autonomic nervous system through neurotransmitters which will affect the hypothalamus and then the pituitary. So it stimulates hormones, thus providing calm and relaxation.

This research is in line with research conducted by Los, (2020), which found a significant influence between levels of depression before and after classical music therapy. This research proven by (Loren Juksen, 2021) shows that patients after being treated with classical music therapy, the level of depression decreased, because

classical music therapy is included in binaural beats which will stimulate the nerve center (brain) precisely in the brain hemisphere right, where this music has a cool and soft feel. This frequency contains subliminal messages (messages that can only be heard by the subconscious brain), when the brain cells buzz In theta wave frequency, humans will begin to feel floating around and there is an increase in body chemicals useful, one of which is serotonin. Serotonin works for controlling the mood until anxiety, stess, depression and worries gradually disappear (Marzuki & Lestari, 2020).

Classical music therapy is a type of therapy that has components, namely tone and rhythm, which can have a psychological and physiological influence on the body. Sound stimulation vibrates the eardrum and is then transmitted to the central nervous system, namely the limbic system. The limbic system functions as neurophysiology related to emotions, feelings and sensations. The sound of music will also stimulate the sympathetic and parasympathetic nerves, causing the listener to get a relaxation response or become relaxed. The relaxation response that will be caused includes, among other things, a decrease in pulse frequency, muscle relaxation, sleep aches, reduced catecholamine release and adrenal corticosteroid levels (Muin et al., 2022). Classical music is believed by almost all music therapists and scientists who have researched the influence of music on the brain or physiology of the human body, to have clarity and clarity contained in music so that it can improve concentration, partial perception, reduce aggressive and anti-social behavior, regulate related hormones. with stress and changes perception and influences understanding of the surrounding space, creating a sense of security, relaxation, reducing anxiety and overcoming depression (Rosiana, 2019).

According to Faridah (2016) music therapy is a form of therapy that uses music to overcome health problems both in physical and psychological aspects (Faridah, 2016). Classical music is a type of music that uses a diatonic scale, namely a scale that uses the basic rules of comparative theory and classical music has recognized harmony, namely the relationship of notes sounded simultaneously in chords and creates a musical structure that is not only based on patterns. rhythm and melody and also classical music which has a slow tempo or classical music which has long and slow sounds because it will cause the heartbeat, hearing becomes better slow so that physical tension becomes lower and creates physical calm (Los, 2020).

Music therapy is a technique used to cure a disease that uses certain rhythms. There are many types of music used in music therapy, such as classical music, instrumental music, relaxing rhythmic music, orchestral music, and other modern music. Music is an organized auditory stimulus, consisting of melody, rhythm, harmony, color (timber), form and style. All types of music can be used as therapy, such as relaxation songs, popular songs and classical songs (Tristianti, 2020). The type of music used in this research is classical music (Beethroven). Providing music therapy with a tempo of 40-80 beats per minute or at a slow-medium tempo and a volume of 60 – 70 decible. Patients who are given music therapy will be placed in a quiet room in a relaxed position and the duration given is approximately 15 – 20 minutes and given twice a week music therapy in 5 weeks.

V. CONCLUSION

Based on research conducted on 45 respondents regarding the influence of classical music therapy (*Beethroven*) on the level of depression in chronic kidney failure patients undergoing hemodialysis in the Hemodialysis Room The "Lestari" Kidney & Hypertension Clinic concluded that Bethoven's classical music therapy was effective in reducing symptoms of depression in CKD patients undergoing hemodialysis. It is hoped that future researchers will be able to expand the scope of research to make it more perfect and future researchers can develop a combination of classical music therapy to reduce the level of depression in chronic kidney failure patients and it is recommended that 2 groups be created, namely an intervention group and a control group (as a comparison) so that it can be more significant. know the difference.

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