



THE EFFECTS OF HAND AND FOOT MASSAGE BASED ON *COMFORT THEORY* ON THE DECREASE IN FATIGUE AND ANXIETY VALUES IN CHRONIC KIDNEY FAILURE PATIENTS UNDERGOING HEMODYLALYSIS

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ABSTRACT

Complaints that often arise in hemodialysis patients are nausea, vomiting, anemia, fatigue, sleep disorders, and increased urea levels. Anxiety is caused by innate and physiological factors, namely those that influence or manifest in physical symptoms, especially in the function of the central nervous system, both from within the patient and from outside the patient. This study aims to provide scientific evidence to support the use of these interventions as a comfortable and effective prevention strategy for patients with chronic kidney failure. Comforting intervention needed in nursing intervention, the comfort level of Kolkaba is at the transcendence comfort level. The method used is quasi experimental with a pretest-posttest control group design approach, the sample size is 40 people, namely 20 interventions groups and 20 controls groups. The sampling technique is Purposive Sampling Technique. The research instrument used the Fatigue Severity Scale (FSS) questionnaire and DASS 42. FSS shows high reliability with Cronbach's Alpha value >0.9 , such as 0.968 as well as good validity based on Pearson correlation ($r >0.623$, $\text{Sig} <0.05$). The DASS-42 has excellent reliability (Cronbach's Alpha >0.9 for each dimension: depression 0.954, anxiety 0.903, stress 0.917) and validity 0.782. The data were analyzed using the Pariet t- test with significance at fatigue $p = 0.000 (<0.05)$. While anxiety shows the Pariet t- test with significance $p = 0.015 (<0.05)$, indicating that hand and foot massage therapy has an effect on reducing fatigue and anxiety values. The conclusion of this study is that there is an effect of hand and foot massage based on the theory of comfort on reducing fatigue and anxiety values in chronic kidney failure patients undergoing hemodialysis.

Keywords: anxiety; fatigue; hand and foot massage; hemodialysis

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INTRODUCTION

Chronic Kidney Disease (chronic kidney failure) or more often called fail kidney Chronic is a disease that disrupts kidney function and cannot be recovered. (Montan et al., 2018) . The body's inability to maintain metabolism and balance fluid And electrolyte This cause impact on increased urea (Sari & Batubara, 2017) . People with chronic kidney failure will experience a decline in their kidney function. slowly (Muhammad Zulfikar Asumta et al., 2024) . Signs and symptoms are found in other diseases both physically and psychologically, physically such as nausea, vomiting, changes in urination frequency, swelling while psychological signs and symptoms such as anxiety, stress to depression (Maya Suci Kurniawati et al., 2022). According to World Health The World Health Organization (WHO) states that globally more than 500 million people experience chronic kidney failure. In developing countries, the incidence is estimated at around 40-60 cases per million people per year. (WHO, 2023).

Hemodialysis is a therapy to replace kidney function by using a semi- permeable membrane that functions like a nephron that can remove metabolic waste and correct fluid and electrolyte imbalances in patients with chronic kidney failure (Abdu & Satti, 2024) . When undergoing hemodialysis, patients with chronic kidney failure need about 4-5 hours per day where the impact of

hemodialysis is very influential on the physical condition that will force the patient to be unable to move freely to do activities both at home and in the social environment (Bossola et al., 2023).

Fatigue in patients hemodialysis caused by Because anemia , occurs decline secretion erythropoietin , levels hemoglobin decreased , malaise occurs , often evaporate , level Hb < 11.5 gr/dl and occurs fatigue (Mardiyah & Azmy, 2022) .Fatigue occurs in patient Which undergo hemodialysis If No handled impact on quality life they, anxiety often happen on patient fail kidney when starting hemodialysis or several months after starting it (Laksmana & Indriyawati, 2022) . This is due to the discomfort associated with invasive procedures such as hemodialysis needle insertion , uncertainty about how long dialysis will be required throughout life, as well as awareness self client that his illness No healed again and have to change their lifestyle (Rositasari & Maliya, 2022).

Anxiety is influenced by several factors, both biological factors, namely those originating from or determined by innate factors, and physiological factors, namely those that influence or manifest in physical symptoms, especially in the function of the central nervous system, both from within the patient and from outside the patient, acceptance of the implementation of hemodialysis, socio-economic factors, patient age, patient condition, long And frequency undergo hemodialysis arise Because threat from the patient, thus giving rise to psychological and behavioral responses from the patient that can be observed, while self-threats to hemodialysis patients can originate from human responses (nurses), human interactions and the environment. exposed by tool Which used (Nagy et al., 2023) . Patients Which experience dialysis In the long term, people will feel worried about their illness which cannot be predicted and will affect their lifestyle (Udani et al., 2023).

Fatigue and anxiety can be managed through pharmacological and non-pharmacological interventions (Caldwell et al., 2019) . Fatigue can be managed by supplementing with L-Creatinine, vitamin C, erythropoietin , and medication to control anxiety. One method of relaxation that can be used to reduce fatigue and anxiety levels is relaxation. hand massage and foot Massage therapy and reflexology are manual therapy approaches used to facilitate health healing and can be used by nurses in every service (Yuma Yokota et al., 2023) . This type of research aims to determine the effect of hand massage and foot massage to reduce fatigue and anxiety levels.

METHOD

This research is a Quasy research experiment with a pretest-posttest approach control design. In design This involving two group, namely the hand intervention group massage and foot massage and control group Fatigue and anxiety scores will be measured in each group after the intervention. Fatigue and anxiety scores will then be reassessed. A sample of 40 respondents was drawn using purposive sampling from the HD patient population at Dr. Haulussy Ambon Regional Hospital in May. The sampling technique used purposive sampling based on the study sample size of 40 respondents: 20 patients in the intervention group and 20 in the control group. The research instrument used the Fatigue Severity Scale (FSS) questionnaire and DASS 42. FSS shows high reliability with Cronbach's Alpha value >0.9, such as 0.968 as well as good validity based on Pearson correlation ($r > 0.623$, Sig < 0.05). The DASS-42 has excellent reliability (Cronbach's Alpha > 0.9 for each dimension: depression 0.954, anxiety 0.903, stress 0.917) and validity 0.782. Data analysis used a Paired T-Test with significance level of 0.05.

RESULT

Based on the table 1, it shows that the intervention given had a significant effect in reducing the level of fatigue in chronic kidney failure patients undergoing hemodialysis. In the intervention group, the average fatigue score decreased from 37.15 to 23.75 after being given *Comfort-based hand and foot massage. Theory*. Meanwhile, in the control group, which only received standard hospital care, fatigue scores also decreased from 38.50 to 26.40. The difference in decrease (delta)

in the intervention group was 13.40, while in the control group it was 12.10. The statistical test results showed a p value of 0.004, which means it is smaller than 0.05 and is classified as statistically significant. In other words, although both groups experienced a decrease in fatigue, the decrease in the intervention group was proven to be greater and more significant, so this intervention can be concluded as effective in reducing patient fatigue.

Table 1.
Analysis of the Effect of Intervention on Fatigue Scores in Chronic Kidney Failure Patients Undergoing Hemodialysis

Variables	Group	Mean ± SD	P- Value
Pre score	Treatment Control	38.50 ± 3.187 37.15 ± 5.985	0.379
Post score	Treatment Control	26.40 ± 3.119 23.75 ± 3.291	0.013
Delta (Post-pre)	Treatment Control	12.10 ± 4.090 13.40 ± 7.133	0.004

Table 2.
Analysis of the Effect of Intervention on Anxiety in Chronic Kidney Failure Patients Undergoing Hemodialysis

Variables	Group	Mean ± SD	P- Value
Pre score	Treatment Control	24.55 ± 3.62 21.20 ± 2.84	0.002
Post score	Treatment Control	24.25 ± 4.24 19.60 ± 4.31	0.001
Delta (Post-pre)	Treatment Control	1.05 ± 4.65 1.60 ± 4.77	0.014

Based on the results of the analysis in the table above, it can be concluded that hand and foot massage is based on *Theory of Comfort* has a significant influence in reducing anxiety in chronic kidney failure patients undergoing hemodialysis. This is proven by the results of statistical tests which show a p value = 0.014 (less than 0.05), meaning that the difference that occurs is significant and not due to chance. The group that received the intervention showed a greater reduction in anxiety, with an average reduction (delta) of 1.60, compared to the control group which only decreased by 1.05. Thus, this comfort theory-based hand and foot massage intervention was shown to be more effective in reducing patient anxiety compared to standard care alone.

DISCUSSION

Analyzing the Influence of Hand and Foot Comfort -based massage theory on the Decreased Fatigue and Anxiety Values in Chronic Kidney Failure Patients Undergoing Hemodialysis. Based on the table, it shows that there is a significant influence of the intervention on reducing fatigue levels in patients. Average score fatigue group intervention decrease from 37.15 ± 5.99 (pretest) to 23.75 ± 3.29 (posttest), while in the control group it decreased from 38.50 ± 3.19 to 26.40 ± 3.12. The difference in decrease or delta in the intervention group was 13.40 ± 7.13, while in the control group it was 12.10 ± 4.09, with a p value of 0.004. The value p Which significant (< 0.05) show that intervention The intervention provided had a significant effect on reducing fatigue scores compared to standard treatment in the control group. This means that the reduction in fatigue levels in the intervention group was not only greater on average but also statistically significant, so it can be concluded that the intervention was effective in reducing fatigue in patients.

The results of the study conducted at Dr. M Haulussy Ambon Regional General Hospital showed that the average fatigue score in the intervention group before hand therapy was given was 0.001. and foot massage based theory comfort obtained as much as 37.15 with a standard deviation of 5.985 respondents experienced severe fatigue after being given hand massage . and foot massage based theory comfort The mean obtained was 23.75 with a standard deviation of 3.291 respondents experiencing mild fatigue . Meanwhile, in the control group before being given average fatigue score on intervention group before hand administration and foot massage based theory comfort obtained as much as 38.50 with std.deviation 3,187 respondents experienced severe fatigue category after being given hand and foot massage based theory comfort in get mean 26.40 with std 3,119 respondents experienced mild fatigue category . Based on the Paired T- Test, there was a significant decrease in fatigue value with a p value = 0.015 (<0.05)

This is supported by previous research which states that the influence of hand Massage is a non-pharmacological therapy in the form of stimulation under the skin tissue by administering touch therapeutic Which can help in reduce hormones endorphins reason stress And anxiety (Rini, 2020) . This therapy can provide comfort, flavor relax, as well as can lower anxiety with the release of endorphins and chemicals that stimulate a feeling of comfort during massage (Pangesti et al., 2024). Influence Foot Massage is a method massage feet at certain points . This foot massage will stimulate the release of hormones endorphins which cause a relaxing effect so that anxiety And fatigue Which is at on normal can return normal. Massage foot is type exercise passive Which can own effect calming by reducing the activity of the sympathetic nervous system, lowering blood pressure And increase circulation blood in body. Arteries blood widen reflexively when nerve receptors are stimulated (Setiawan & Rahayu, 2021).

This result is in line with research (Shady & Ali, 2019) , that massage hand And foot Which given on patient three times/week for 30 minute per session can reduce fatigue as big as 20.01- 66.4%, supported with research that prove that reflection hand and feet given three times in 3 weeks for 40 minutes. The movements are done in turns starting from stretching the fingers, finger pulling techniques, stretching movements of the hands, moving the palms, responding to the movements of the palms, from the heels to the toes using oil or without oil. Massage on the leg muscles will stimulate the limbic system to produce Corticotropin - Releasing Factor (CRF).

This product can stimulate the pituitary gland to secrete endocrine and pro opioid melanocortin which can increase productivity. enkephalin by the adrenal medulla which influences changes in a person's mood (Dian et al., 2023) . Increased endorphins And serotonin in brain will create feeling relax in a way physical (Al Salmi et al., 2021) . In addition, endorphins will suppress cortisol secretion , so that besides relax in a way physique patient Also will feel relax Psychologically, increased endorphins can dilate blood vessels (Habibzadeh et al., 2019) . This condition will improve blood and lymph circulation, which can be proven to reduce fatigue levels. Which felt patient hemodialysis. Strengthened with research (Lestari & Hudiyawati, 2022) which states that reflexology massage of the hands and feet done with oil and without oil capable reduce fatigue levels in hemodialysis patients. This proves that the intervention given to the treatment group, namely Hand and foot massage theory- based comfort very effective to decline mark fatigue And anxiety that given (Youssef & Hassan, 2017).

CONCLUSION

Chronic kidney failure patients undergoing hemodialysis experienced severe fatigue before being given the procedure and the level of fatigue after being given Hand and foot massage fatigue value decreases. On patient chronic kidney failure undergo hemodialysis before given the act of experiencing bad anxiety, after being given the Hand and Foot Massage The respondent's anxiety value decreased.

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