

# Physical Activity Patterns on Quality of Life in Chronic Kidney Failure Patients With Hemodialysis: Literature Review

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# Physical Activity Patterns on Quality of Life in Chronic Kidney Failure Patients With Hemodialysis: Literature Review

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## ARTICLE INFO

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## ABSTRACT

**Background:** Patients with chronic kidney failure require appropriate therapy to optimize kidney function. This therapy is not a drug, but as a substitute for kidney function. Renal function replacement therapy, such as hemodialysis is a routine medical treatment for chronic kidney disease. **Method:** The research design used a systematic use of several research journal articles published on the basis of Health. the health databases used include: Google Scholar, the national library and Pubmed with a time span of 2012 to 2020. **Results:** The results of this study are that there is an influence of physical activity patterns on the quality of life of patients with chronic kidney failure with hemodialysis. **Conclusion:** Patients with chronic kidney failure who undergo long-term hemodialysis therapy often feel worried about unpredictable disease conditions and disturbances that occur in life due to the disease they are experiencing. The patient's mindset changes because there are activities the patient does besides thinking about his illness.

## I. Introduction

The problems experienced by patients with chronic kidney failure who undergo hemodialysis tend to have higher levels of anxiety and stress compared to patients who have received hemodialysis therapy many times. Patients may experience impairments in cognitive, adaptive, or social functioning compared to other normal people. Psychological problems experienced by hemodialysis patients have actually been shown since the first time the patient was sentenced to experience chronic kidney failure. Anxiety and fear are common reactions to disease stress. Feelings of loss of control, guilt and frustration also play a role in the patient's emotional reaction. Illness makes the patient feel helpless, being aware of the death of the body makes the patient feel very anxious (Lase, 2016).

The World Health Organization (WHO) (2018), explains that chronic kidney failure is a major problem worldwide and a problem in medical conditions. This disease causes 850,000 deaths annually. Based on the United States Renal Data System Annual Report (2018), it is stated that more than 615,000 Americans are being treated for kidney failure. Of these, more than 430,000 are dialysis patients and more than 185,000 have kidney transplants (WHO, 2018).

In Indonesia, the increase in patients with this disease has reached 20%. Based on data from the Indonesia Renal Registry, a registration activity of the Indonesian nephrology association, in 2018 the number of hemodialysis patients (washing blood) reached 2260 people from 2146 people in 2018 (Ministry of Health, 2018). According to Riskesdas (2018), the prevalence of chronic kidney failure in Indonesia based on doctor's diagnosis is 0.2%. The highest prevalence is in Central Sulawesi at 0.5% while in East Java the prevalence of CKD is 0.3%. According to Infodatin 2017, treatment of kidney disease in Indonesia ranks second in the largest financing from BPJS health after heart disease.

Various problems that occur in patients with chronic kidney failure undergoing hemodialysis will trigger various problems such as physical, psychological, lifestyle, and social changes that will have an impact on the patient's quality of life. Besides that, there are also problems in terms of economy where the cost of treating this disease is a big economic burden (Prodjosudjadi, 2017). Patients with chronic renal failure who undergo long-term hemodialysis therapy often feel worried about the unpredictable condition of the disease and the disturbances that occur in life due to the disease experienced. For some CKD patients, quality of life is something that is not easy to achieve, even they consider their lives to be counted on the fingers and vent their despair by not heeding the instructions of the medical team (Chelliah, 2017).

Patients with chronic kidney failure require appropriate therapy to optimize kidney function. This therapy is not a drug, but as a substitute for kidney function (Widiana, 2007). Renal function replacement therapy, such as hemodialysis is a routine medical treatment for chronic kidney disease. Patients do hemodialysis therapy for 4-5 hours in each session. The patient must also control the symptoms and complications of the disease. This serves to improve the quality of life of patients with chronic kidney failure (Legiarti, 2009).

Hemodialysis therapy can prevent death and prolong the life of CKD patients in the terminal stage. It is known that hemodialysis therapy cannot cure or restore kidney disease, patients will still experience a number of clinical manifestations and complications due to changes in the form and function of systems in the body due to kidney damage (Hidayti, 2013).

The results of the 2014 Firmansyah study stated that the implementation of physical exercise after undergoing hemodialysis therapy can increase muscle strength in the extremities of Chronic Kidney Failure Patients at the Semarang City Regional General Hospital. The problem that is often complained of in routine post hemodialysis patients is the occurrence of muscle weakness and stiffness after hemodialysis caused by old beds during the hemodialysis process. In theory, muscle weakness is caused by activity restrictions during hemodialysis, muscle myopathy, muscle atrophy, neuropathy or a combination of the two (Firmansyah, 2014).

The system of higher order organization of organic matter that uses chemical energy to produce mechanical work under the control of the nervous system is called a muscle. Muscle weakness can be overcome by doing physical exercise. Physical exercise is a planned, regular, structured and directed movement carried out to improve and maintain one or more aspects of physical fitness in someone who has muscle weakness (Kadir, 2013).

Physical exercise aims to maintain and improve overall body health and improve the blood circulation system. There are three methods of physical exercise in general that can be done in patients with end-stage kidney disease, namely an exercise program for the first 60 minutes when hemodialysis is carried out in the hemodialysis unit, an exercise program at a supervised rehabilitation center, an exercise rehabilitation program at home (Knap, 2015).

Therefore, it is expected that a professional nurse should pay attention to the quality of life of chronic kidney failure patients undergoing hemodialysis. Nurses provide holistic nursing care, namely bio-psycho-social-spiritual, nurses who provide hemodialysis to patients are required to be able to help patients recover optimally, both in physical and psychological aspects. Improved psychological well-being in patients undergoing hemodialysis can be assessed by the state of their quality of life. Hemodialysis nurses, require the establishment of new parameters in life and introduce real things for new kidney failure patients, especially in people who have a lot of activities so they cannot undergo hemodialysis every week.

Based on the above phenomenon, the researcher is interested in conducting a research entitled "Patterns of Physical Activity on the Quality of Life of Patients with Chronic Kidney Failure with Hemodialysis.

## II. METHODS

The research design used a systematic use of several research journal articles published on the basis of Health. the health databases used include: Google Scholar, the national library and Pubmed with a time span of 2012 to 2020.

## III. RESULTS

Based on a literature review search, it was found in 13 search articles with research results stating that all journals explained that there was an influence of physical activity patterns on the quality of life of patients with chronic kidney failure with hemodialysis.

Research conducted by Sofiana Nurcahyati, Darwin Karim, (2016), regarding the Implementation of the Self Care Model in an Effort to Improve the Quality of Life for Patients with Chronic Kidney Failure, the results showed that the most sex was male 17 people (56.7%), the highest age was early elderly ( 46-55 years) as many as 17 people (56.1%), the longest HD was <1 year 11 people (36.3%). After implementing self care for 4 weeks there was an increase in the average score of quality of life in patients with chronic kidney failure from the previous value of 68 to 73.

Research conducted by Dewi Sari Mulia, Evi Mulyani, Guntur Satrio Pratomo & Nurul Chusna (2018), on the quality of life of chronic kidney failure patients undergoing hemodialysis at the dr. Doris sylvanus palangkaraya, the results showed that the patient's quality of life for the physical and psychological domains was in the moderate category, while the environmental and social domains were in the good category.

Research conducted by Suwanti1, Taufikurrahman, Mohamad Imron Rosyidi1, Abdul Wakhid (2017), regarding the description of the quality of life of patients with chronic kidney failure undergoing hemodialysis therapy, the results obtained were an overview of the quality of life of patients with chronic kidney failure seen from the dimensions of physical health having quality of life. bad, as many as 23 people (56.1%). The psychological health dimension has poor quality of life, as many as 24 people (58.5%). The dimension of social relations has a good quality of life, as many as 21 people (51.2%). The environmental dimension has a good quality of life, as many as 22 people (53.7). The description of the quality of life of kidney failure patients undergoing hemodialysis has a poor quality of life as many as 25 people (61.0%), while 16 respondents (39.0%) have a poor quality of life. good quality of life.

Research conducted by Sri Supart, Umi Solikhah (2016), regarding the Differences in the Quality of Life of Patients with Chronic Kidney Failure in terms of Education Level, Frequency and Duration of Hemodialysis at Goeteng Taroenadibrata Hospital Purbalingga, it was found that there was no difference between the quality of life of highly educated respondents and educated respondents. low with p value = 0.736 or P> 0.05. There is no difference between the quality of life of respondents who have a low frequency of hemodialysis and a high frequency of hemodialysis with p value = 0.238 or P> 0.05 and there is no difference between the quality of life of respondents who have new and old hemodialysis with a value of p = 0.984 or P> 0.05.

Research conducted by Ratna Yunita Sari, Abu Bakar, Yanis Kartini (2018) on the effect of combined deep breath physical exercise on the level of Fatigue in hemodialysis patients at the Islamic Hospital of Sunsari Surabaya in 2018, it was found that the results of the study in the intervention group before exercise were mostly (72.2%) severe fatigue and control group mostly (66.7%) severe fatigue and most (66.7%) poor quality of life. After the exercise, almost all of the intervention group (94.4%) had mild fatigue and mostly (55.6%) moderate quality of life and the control group mostly (61.1%) severe fatigue and most (55.6%) less quality of life. In the intervention group Wilcoxon signed rank test analysis p = 0.000 fatigue level and p = 0.000 quality of life, control group p = 0.233 fatigue level and p = 0.157 quality of life. Mann-Whitney test analysis p = 0.000 < 0.05 fatigue level and p = 0.001 < 0.05 so that H0 is rejected, meaning that physical exercise combined deep breathing on fatigue levels and quality of life.

Research conducted by Fitri Rahayu, Dwi Wulandari, Dilfera Hermiati (2018) on the Effect of Physical Exercise on Muscle Strength of Patients with Chronic Kidney Failure in the Hemodialysis

Room, the results of the analysis using the paired T test obtained an average (mean) pretest of 0.70 and the posttest value is 0.47 with a significance value of 0.006 which means that there is a significant effect of physical exercise.

Based on a literature review search, it was found in 10 search articles with research results stating that all journals explain that there is an influence of physical activity patterns on the quality of life of patients with chronic kidney failure with hemodialysis, besides that based on the article above, there are several other factors that affect the quality of life, namely physical exercise experience, combination of deep breaths, education level, frequency and duration of hemodialysis

#### IV. DISCUSSION

##### Quality Of Life Of CKD Patients With Hemodialization

The results of research conducted by Dewi Sari Mulia (2018) regarding the quality of life of chronic kidney failure patients undergoing hemodialysis at the dr. Doris Sylvanus Palangkaraya. The results found that the patient's physical and psychological domains were included in the moderate quality of life category, while the social and environmental domains were included in the good quality of life category. Patients undergoing hemodialysis have the same condition when they are diagnosed with chronic kidney failure. The duration of hemodialysis treatment plays an important role for patients with chronic kidney failure. Patients who undergo dialysis twice/week have a better quality of life compared to patients who undergo dialysis three times/week (Bohlke et al., 2008). Hemodialysis twice a week helps patients improve their quality of life, due to the lack of complications, the rate of uremia decreases over time, and the lack of residual diuresis (Guerrero et al., 2012).

According to Mc. Cartney and Larson in Yuwono (2000) stated that there is an inverse relationship between the quality of life of patients with age, the older a person is, the quality of life will also decrease. Kurtus (2005) states that the quality of life consists of three components, namely health, ownership and hope, so this is of course also related to factors of age, education level, and employment status. Quality of life according to the World Health Organization Quality of Life (WHOQOL) Group (in Rapley, 2017), is defined as an individual's perception of the individual's position in life in the context of the culture and value system in which the individual lives and its relationship to the goals, expectations, standards set and one's concerns. (WHO, 2018).

Patients with chronic kidney failure require appropriate therapy to optimize kidney function. This therapy is not a drug, but as a substitute for kidney function (Widiana, 2007). Renal function replacement therapy, such as hemodialysis is a routine medical treatment for chronic kidney disease. Patients do hemodialysis therapy for 4-5 hours in each session. The patient must also control the symptoms and complications of the disease. This serves to improve the quality of life of patients with chronic kidney failure (Legiarti, 2009).

From the discussion above, the author can assume that psychological activity with moderate quality of life is because the quality of life is strongly influenced by psychology, one of the causes is stress, when stress is not controlled properly, the quality of life is not good.

Meanwhile, another study conducted by Sri Suparti (2016) on the Differences in Quality of Life of Patients with Chronic Kidney Failure in terms of Education Level, Frequency and Duration of Hemodialysis at Goeteng Taroenadibrata Hospital Purbalingga, it was found that around 22 respondents (66.7%) had a high quality of life. good and 12 respondents (33.3%) and the rest are less qualified. Involve and increase the role of the family as a support system in order to improve the quality of life of hemodialysis patients and provide education related to the importance of limiting fluid intake, so that patients know about post hemodialysis care which will ultimately maintain a normal weight and provide movement exercises, sports and programs entertainment for patients undergoing hemodialysis is important.

Diagnosed with Chronic Kidney Failure and having to undergo hemodialysis for life can have an impact on individual patients with kidney failure. In undergoing fluid hemodialysis, and diet must be limited, this causes loss of freedom, dependence on health services, conflicts in marriage, family and

social life, reduced income. These things can affect the quality of life of patients with chronic kidney failure (Shangholian, et al, 2008). These results indicate that, although the level of education of the respondents is low, the quality of life of the respondents is of good quality and almost all of them are elderly.

From the discussion above, the authors can assume that for patients undergoing hemodialysis, there is no difference in the quality of life between patients whose frequency is more than that which is less, it is possible because of their belief that the quality of life is subjective and does not depend on the amount of hemodialysis they have done. From the results of interviews with respondents they do not think how long they have been undergoing, they only know that hemodialysis will be carried out throughout their lives after a post diagnosis of chronic kidney failure, and they think positively they will be fine.

#### Activity Patterns Of CKD Patients With Hemodialization

Research conducted by Fitri Rahayu, Dwi Wulandari, Dilfera Hermiati (2018) on the Effect of Physical Exercise on Muscle Strength of Patients with Chronic Kidney Failure in the Hemodialysis Room, the results of the analysis using the paired t test obtained an average (mean) pretest of 0.70 and the posttest value is 0.47 with a significance value of 0.006 which means that there is a significant effect of physical exercise. From the results of this study, further research can examine physical exercise by developing research concepts such as developing tested variables, for example checking sleep quality, stress/depression or expanding the research area and increasing the frequency of giving physical exercise in order to see other effects arising from the application of physical exercise. physical training. The development of this research can be used as material for a more in-depth analysis. For patients diagnosed with chronic kidney failure who can do physical exercise after doing hemodialysis well and not bed rest after hemodialysis therapy.

Physical activity that can make a person feel happier and more relaxed than before. A person's appearance will also look better, fitter and happier when exercising regularly. This will immediately increase self-confidence as well as boost self-esteem. Regular physical activity can help prevent depression. On the other hand, regular physical activity can help a person control high blood pressure. Physical activity causes low density lipoprotein (LDL) or bad cholesterol to be reduced. Regular physical activity has the potential to increase high density lipoprotein (HDL) or good cholesterol, while reducing triglycerides. Two benefits are achieved together, namely your blood flows smoothly, and at the same time reduces plaque buildup in the arteries.

From the discussion above, the writer can assume that when the respondent does physical exercise, it will restore the thoughts and feelings felt by the patient so that there are different perceptions about the respondent's illness. So doing physical activity is highly recommended to improve the quality of life of CKD patients with hemodialysis.

#### Relationship Of Activity Patterns With Quality Of Life Of CKD Patients With Hemodialization

The results of research conducted by trisna setya deswi (2018), regarding the Relationship of Lifestyle with Chronic Kidney Failure Incidence at Pku Muhammadiyah Hospital Yogyakarta, it was found that the lifestyle in the highest case group was an unhealthy lifestyle as many as 23 patients (57.5%) and the lowest was a healthy lifestyle as many as 17 patients (42.5%) while in the control group the highest was a healthy lifestyle as many as 28 patients (70%) and the lowest was an unhealthy lifestyle as many as 12 patients (30%). While the relationship between physical activity and the incidence of chronic kidney failure, it was found that based on the Chi-Square statistical test analysis on the relationship between physical activity and the incidence of chronic kidney failure, it was found that the p value of physical activity was 0.370, so that the p value of physical activity was  $> 0.05$ , so physical activity was not There is a relationship with the incidence of chronic renal failure. The Odd Ratio value of physical activity is 1.658, which means that people with poor physical activity are not a risk factor

for CKD. This is different from research conducted by Wulandari (2013) which states that there is a relationship between physical activity and the incidence of chronic kidney failure.

Various problems that occur in patients with chronic kidney failure undergoing hemodialysis will trigger various problems such as physical, psychological, lifestyle, and social changes that will have an impact on the patient's quality of life. Besides that, there are also problems in terms of **economy** where the cost of treating this disease is a big economic burden (Prodjosudjadi, 2017). Patients with chronic renal failure who undergo long-term hemodialysis therapy often feel worried about the unpredictable condition of the disease and the disturbances that occur in life due to the disease experienced. For some CKD patients, quality of life is something that is not easy to achieve, even they consider their lives to be counted on the fingers and vent their despair by not heeding the instructions of the medical team (Chelliah, 2017).

From the discussion above, the author can assume that there is no relationship between quality of life and life activities because the patient's activities focus on his daily routine, so that the assumption about the quality of life is just like daily activities, for that from the results of the above research, there is no relationship between quality of life. with physical activity

## V. CONCLUSION

It can be concluded that physical activity is very influential on the incidence of quality of life in CKD patients. When a patient with CKD has limited physical activity, it will have an impact on the patient's psychology so that it can make the condition of the patient with CKD worse. Patients with chronic renal failure who undergo long-term hemodialysis therapy often feel worried about the unpredictable condition of the disease and the disturbances that occur in life due to the disease experienced. For some CKD patients, quality of life is something that is not easy to achieve, they even consider their lives to be counted on the fingers and vent their despair by not heeding the instructions of the medical team. So that physical activity becomes a very useful solution for patients with CKD to improve quality of life.

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