THE RELATIONSHIP OF LONG TIME UNDERGOING HEMODIALYSIS AND THE INCIDENCE OF FATIGUE IN CHRONIC KIDNEY DESEASE PATIENTS UNDERGOING HEMODIALYSIS AT INDRAMAYU HOSPITAL

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ABSTRACT

The prevalence of Chronic Kidney Disease in Indonesia based on Riskesdas in 2018 reached 0.38% and in 2013 it was recorded that only 0.20% of Indonesians suffered from CKD, this shows an increase of 0.18% in CKD patients in Indonesia. CKD patients must undergo hemodialysis throughout their lives. One of the side effects of hemodialysis is fatigue. One of the factors that influence fatigue in hemodialysis patients is factors related to dialysis, namely the length of time undergoing hemodialysis. The purpose of this study was to determine the relationship between the length of time undergoing hemodialysis and the incidence of fatigue in chronic kidney disease patients undergoing hemodialysis at the Indramayu Hospital. This research uses analytical research methods with a cross sectional approach. The sampling technique used purposive sampling, with a total sample of 112 respondents. The instrument used a questionnaire. Data analysis using chi square test. The results showed that 63 (56.3%) respondents who underwent hemodialysis had been undergoing hemodialysis for a long time and were included in the category of having undergone hemodialysis for a long time. The incidence of fatigue in CKD patients undergoing hemodialysis was 67 (59.8%) respondents included in the fatigue category. Data analysis using chi square showed that p-value= 0.000, which means that there is a relationship between the length of undergoing hemodialysis and the incidence of fatigue. It is recommended for hemodialysis nurses to provide education to chronic kidney disease patients on how to reduce fatigue while undergoing hemodialysis]

Keywords: Chronic Kidney Disease, Fatigue, Hemodialysis, length of time undergoing hemodialysis

INTRODUCTION

Chronic renal Desease (CKD) is damage or decreased function of the kidneys. A decrease in kidney function is characterized by the body no longer being able to maintain fluid and electrolyte balance in the body, resulting in retention of toxic substances and nitrogen resulting from the body's metabolic waste in the blood, which is also called Uremia (Smaltzer & Bare, 2015; Black & Hawk, 2014).

Based on data from WHO (2018), CKD contributes to the world's disease burden with a death rate of 850,000 people per year. According to the Indonesia Renal Registy / IRR (2018), every year around 200,000 people suffer from CKD. The prevalence of Chronic Kidney Failure in Indonesia based on Riskesdas in 2018 reached 0.38% and in 2013 it was recorded that only 0.20% of Indonesians suffered from CKD, this shows an increase of 0.18% in CKD patients in Indonesia. In 2018, there were 33,000 active CKD sufferers in Java and 14,700 new patients (Indonesia Renal Registry, 2018).

Dialysis is a process used to remove excess fluid and waste products from the body's metabolism when the kidneys are no longer functioning properly. The method used in dialysis therapy is hemodialysis .

Therapy hemodialysis is therapy For throw away remains metabolism body , poison certain such as water, potassium , sodium , hydrogen , creatinine , urea, acid veins , and other substances with technology distributed height _ through semi permeable membrane as separator blood And substance other substances in the kidneys artificial . The processes that occur in an artificial kidney are diffusion, osmosis and ultra filtration (Haryanti & Nisa, 2015).

In the implementation of hemodialysis it can cause several complications, according to Siregar (2020) complications are caused by internal and external factors. Complications that can occur include complications in the bleeding system in the form of chest pain due to decline PCO 2 is accompanied by vascular blood loss, dialysis dissequilibrum syndrome in the form of nausea and vomiting and decreased consciousness due to cerebral dysfunction, pruritic complications related to urea metabolism waste substances forming uremic crystals in the skin, and hematological complications related to heparin administration such as thrombocytpenia . Other complications that can be observed in CKD patients undergoing hemodialysis are physical fatigue and lack of energy or also known as fatigue, which are symptoms often experienced by CKD patients undergoing hemodialysis (Sulistini, 2020).

The medical definition of fatigue is to describe a state of suffering, usually associated with physical or mental exhaustion. This is a bodily response where the body does not get enough rest, the body's biological rhythms are disrupted, and there is excessive mental or physical activity (Butarbutar, 2014).

According to Brunner & Suddarth (2018) conditions that influence *fatigue* in hemodialysis patients are uremia, anemia, malnutrition, depression and lack of physical activity. Uremia in hemodialysis patients can cause patients to lose appetite, nausea, vomiting, loss of energy and protein, and a decrease in carnitine

production which causes a decrease in skeletal energy production and results in *fatigue* .

Based on the background above, researchers are interested in examining the relationship between the length of time undergoing hemodialysis and the incidence of fatigue in chronic kidney disease patients undergoing hemodialysis at the Indramayu Hospital

RESEARCH METHOD

This research uses analytical research methods with a cross sectional approach. The sampling technique used purposive sampling, with a total sample of 112 respondents. The instrument used a questionnaire. Data analysis using chi square test.

RESULTS

1. Analysis Univariate

In accordance with research results This obtained based on gender, education, occupation, category of length of time undergoing hemodialisis and fatigue occurrence .

Table 1.
Frequency Distribution of Respondents' Gender

No.	Type	F	%
1.	Man	42	37.5
2.	Woman	70	62.5
	Total	**112**	**100**

Based on from table 1 can is known amount respondents there were 112 respondents (100%), it is known as many as 70 respondents (62.5%) were of the same type sex woman .

Table 2.
Frequency Distribution of Respondents' Education

No.	Education	F	%
1.	No school	25	22.3
2.	Elementary school	35	31.3
3.	Junior High School	24	21.4
4.	Senior High School	24	21.4
5.	Diploma	2	1.8
6.	Bachelor	2	1.8
	Total	**112**	**100**

Based on from table 2 can is known amount respondents there were 112

respondents (100%), it is known as many as 35 respondents (31.3%) had elementary school education .

Table 3.
Frequency Distribution of Respondents' Occupations

No.	Work	F	%
1.	No Work	41	36.6
2.	Self-employed	19	17.0
3.	Farmer	8	7.1
4.	Mother House Ladder	41	36.6
5.	Etc	3	2.7
	Total	**100**	**100**

Based on table 3, it can be seen that the number of respondents was 112 respondents (100%), it is known that 41 respondents (36.6%) did not work, and 41 respondents (36.6%) worked as housewives.

Table 4.
Frequency Distribution of Respondents ' Time of Living HD

NO	Long Live HD	F	%
1.	New undergoing HD	49	43.8
2.	Long time on HD	63	56.3
	Total	**112**	**100.0**

Based on table 4 distribution respondents as many as 63 (56.3%) respondents including in category I've been on HD for a long time .

Table 5.
Frequency Distribution of Events Fatigue

No	Fatigue Incident	F	%
1.	Fatigue	67	59.8
2.	No Shows Fatigue	45	40.2
	Total	**112**	**100.0**

Based on Table 5 shows that as many as 67 (59.8%) respondents including in fatigue category .

2. Analysis Bivariate
Results analysis bivariate canseen on following table :

Table 6.
Relationship Undergoing Hemodialysis with Fatigue Events

Long serving Hemodialysis	Fatigue Incident				Σ		P Value
	Fatigue		No Shows Fatigue				
	F	%	F	%	F	%	
New Undergoing HD	11	22.4	38	77.6	48	100.0	**0,000**
Long Live HD	56	88.9	7	11.1	63	100.0	
Amount	**30**	**46.9**	**34**	**53.1**	**64**	**100**	

Based on table 6 can is known Of the 112 respondents undergoing Hemodialysis, of the 48 respondents in the new category undergoing Hemodialysis, 38 (77.6%) did not show *fatigue* . Meanwhile, of the 63 respondents in the long-term hemodialysis category, 56 (88.9%) experienced *fatigue* . Statistical results using the *chi square test* obtained a *P value of* 0.000. Because the P value < (0.05) it can be concluded that Ha is accepted. This means that there is a relationship between the length of time undergoing Hemodialysis and the incidence of *Fatigue* in Chronic Kidney Failure patients in the Hemodialysis Room at Indramayu Regional Hospital.

DISCUSSION

1. Length Of Time Undergoing Hemodialysis

Based on the results of research conducted by researchers on 112 CKD respondents who underwent hemodialysis in the Hemodialysis Room at Indramayu District Hospital, it was found that the results of the length of time undergoing Hemodialysis with the highest percentage were those who had undergone Hemodialysis for a long time, 63 (56.3%) respondents and the lowest were those who had just undergone Hemodialysis, 49 (49) . 43.8%) respondents.

This research is in line with research conducted by Putu Edi Darmawan, et al (2019) with the majority of respondents undergoing hemodialysis for ≥24 months as many as 21 (38%) people, in another study by Astiti (2014) with the majority of respondents undergoing hemodialysis for >2 years as many 14 (37.8%) people, and also in research by Dewi (2017) with the majority of patients ≥24 months as many as 41 (68.3%) people.

Dialysis is a process used to remove excess fluid and waste products from the body's metabolism when the kidneys are no longer functioning properly. The methods used in dialysis

therapy are hemodialysis and peritoneal dialysis. The method that is widely used for dialysis therapy is hemodialysis, because it is thought to remove toxic substances in the body quickly (Black & Hawk, 2014). Hemodialysis therapy is a therapy to remove the remains of the body's metabolism, certain toxins such as water, potassium, sodium, hydrogen, creatinine, urea, uric acid, and other substances using high technology which is channeled through a semi-permeable membrane as a separator for blood and other substances in the blood . artificial kidney. The processes that occur in an artificial kidney are diffusion, osmosis and ultra filtration (Haryanti & Nisa, 2015). For ESRD sufferers, hemodialysis is carried out two to three times a week with a duration of four to five hours per hemodialysis, and will be carried out throughout the patient's life (Siregar, 2020).

2. Fatigue Events

Based on the results of research conducted by researchers on 112 CKD respondents who underwent hemodialysis in the Hemodialysis Room at RSUD Indramayu, the results showed that fatigue occurred with the highest percentage being fatigue, 67 (59.8%) of the respondents and the lowest percentage showing no fatigue, 45 (40.2%).) respondents.

This research is not in line with the research of Putu Edi Darmawan, et al (2019) because 47 (85.5%) of the respondents experienced moderate fatigue. This is due to the use of different questionnaire sheets, this research questionnaire used the FACIT questionnaire while the research by Putu Edi Darmawan, et al used the Multidimensional Fatigue Inventory (MFI) questionnaire.

According to Sulistini R (2020) Fatigue is divided into 3 categories, including physical condition, physical health, mental condition, and lifestyle. Physical health conditions that predispose a person to fatigue, such as illnesses suffered by patients such as flu, arthritis, anemia, Chronic Fatigue Syndrome, fibromyalgia, hypothyroidism, Addison's disease, sleep disorders or insomnia, congestive heart failure, eating disorders: bulimia and anorexia, cancer, diabetes , liver disorders, kidney disorders (kidney failure), emphysema, chronic obstructive pulmonary disease (COPD), a person's mental condition can also cause fatigue, including anxiety, depression, effective disorders, grief and stress, and a person's lifestyle can affect the person fatigue such as sleep disorders, alcohol, lack of physical activity, excessive exercise, obesity, emotional stress, sedation or antidepressant drugs, consuming too much coffee, using illegal drugs.

According to Lock, Bonetti, & Campbell (2018) in Sulistini R (2020) explains that the fatigue scheme is classified into three acute fatigue, cumulative fatigue, circadian or chronodistruption. The acute type lasts around 16 hours, cumulative fatigue is caused by poor quality sleep that occurs over days, weeks or months, and the circadian or chronodistruption type is caused by shifts in sleeping or waking times. Related factors _ with Fatigue incidents include aspect physiology , psychology , situational , and environment . On factor physiology of fatigue caused by anemia, circumstances disease , use increased physique , malnutrition , conditions _ bad physique , pregnancy _ And depression sleep . Aspect psychology like anxiety And style life depression And stress . On aspect situational consists from incident negative life _ And work someone . Whereas aspect environment consists from humidity , light , noise , and temperature . There are other factors such as changes in body chemistry, excessive social and role demands, excessive psychological and emotional demands. Apart from that, the image

above explains other factors, namely factors related to the influence of dialysis. One of the factors that causes fatigue in ERSD sufferers is the length of time undergoing hemodialysis.

In the results of research conducted by researchers, it was found that more respondents experienced fatigue, therefore the researchers tried to link whether there was a relationship between the length of undergoing hemodialysis and the incidence of fatigue experienced by patients with chronic kidney failure.

3. Relationship between Length Of Time Undergoing Hemodialysis And The Incidence Of Fatigue In Chronic Kidney Disease

Based on the results of research conducted by researchers who fell into the new category, there were 48 respondents, of which 38 (77.6%) respondents did not show fatigue. Meanwhile, of the 63 respondents who underwent hemodialysis in the long-term category, 56 (88.9%) respondents experienced fatigue.

The results of statistical tests using the chi square test obtained a P-Value of 0.000, because the P-value < α (0.005), it can be concluded that Ha is accepted, meaning that there is a relationship between the length of undergoing hemodialysis and the incidence of fatigue in chronic kidney failure patients in the Hemodialysis Room at Indramayu Regional Hospital.

The results of this study show the same results as research conducted by Putu Edi Dermawan, et al (2019) regarding the relationship between the length of time undergoing hemodialysis and fatigue in chronic kidney disease patients in the hemodialysis room at Sanglah Hospital, Denpasar, which states that the research results show that there is a relationship between the time undergoing hemodialysis and fatigue. in CKD patients in the Hemodialysis room at Sanglah Hospital, Denpasar, from the analysis results p = 0.000 with a value of r = 0.54. This is also supported by research by Sulistini (2012) which explains that there is a significant relationship between the length of undergoing hemodialysis and the occurrence of fatigue (p = 0.019). This is also reinforced by the statement from Khusniyati, et al (2019) where the prevalence rate of fatigue in long-term hemodialysis patients reaches 60-97%.

In research conducted by researchers, it is clear that there is a relationship between the length of time undergoing hemodialysis and the incidence of fatigue in patients with chronic kidney failure. Decreased physical strength such as fatigue and decreased quality of life will occur in chronic kidney failure patients who have undergone hemodialysis for a long period of time regularly (Darmawan, 2019). Patients who have undergone hemodialysis for a long time will experience fatigue due to the patient's increasing age which results in reduced organ function and will experience a condition of physical weakness or fatigue (Santoso, 2022). Ureum and creatinine levels will show high values in CKD patients who undergo hemodialysis for a long period of time, this results in patients developing anemia because the number of red blood cells decreases. Anemia in hemodialysis patients causes feelings of tiredness, tiredness and lethargy which are signs that the patient is suffering from fatigue.

CONCLUSION

1. Length of time undergoing Hemodialysis in patients with chronic kidney failure in the hemodialysis room of Indramayu District Hospital. Of the 112 respondents, it was found that 63 (56.3%) respondents were in the category of having undergone Hemodialysis for a

long time and 49 (43.8%) respondents were in the category of just undergoing Hemodialysis. .

2. The incidence of fatigue in chronic kidney failure patients in the hemodialysis room at Indramayu District Hospital from 112 respondents, it was found that 67 (59.8%) respondents fell into the category of experiencing fatigue and as many as 45 (40.2%) respondents fell into the category of not showing fatigue.
3. There is a relationship between the length of time undergoing hemodialysis and the incidence of Fatigue in chronic kidney failure patients in the hemodialysis room at Indramayu District Hospital with P-Value (0.000) with (α = 0.05; 95% CI).

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