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FACTORS RELATED TO ANXIETY IN HEMODIALYSIS PATIENTS IN MALANG CITY, INDONESIA

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Abstract

Background: Patients undergoing hemodialysis experience various problems that can arise from malfunctioning of the kidneys. This can be a physical stressor that affects various dimensions of a patient's life, including psychological.

Objectives: This study aimed to determine the factors associated with anxiety in hemodialysis patients

Methods: This study used a cross-sectional design. An accidental sampling technique was used to obtain a total sample of 34 respondents. The data were analyzed using Fisher's exact test.

Results: Based on the results of statistical tests, it is known that the level of anxiety related to hemodialysis patients, namely hemodialysis duration with Fisher's exact ($P= 0.020$). This implies that there is a relationship between the length of hemodialysis and the anxiety level of hemodialysis patients. While the hemodialysis time value ($P= 0.173$, and work status value ($P = 0.080$), there was no association with the anxiety of hemodialysis patients.

Conclusion: This study concluded that the duration of hemodialysis was related to the anxiety of hemodialysis patients, whereas there was no result in hemodialysis and occupational status related to the incidence of anxiety in hemodialysis patients. Therefore, healthcare providers should concern about the duration of hemodialysis time to prevent anxiety.

Keywords: Chronic Kidney Disease, Hemodialysis, Anxiety

INTRODUCTION

The World Health Organization (WHO) explained that the growth in the number of sufferers of chronic kidney failure in 2013 had increased by 50% from the previous year. In the United States, the rate and prevalence of chronic kidney failure have increased by 50% in 2014. The data shows that every year

200,000 Americans undergo hemodialysis therapy due to chronic kidney failure, which means 1140 in one million Americans are patients who are currently undergoing treatment of hemodialysis therapy (Nastiti, 2015).

In Indonesia alone, 22140 active patients suffered from chronic kidney failure, who

underwent hemodialysis, then in 2013 there were 21759 patients, 2014 there were 21165 patients, 2015 there was an increase of 30554 patients, in 2016 the occurrence a very significant increase, namely 52,835 patients, and in 2016 there were also 25,446 new patients who underwent hemodialysis (Indonesian & Registry, 2016).

Patients undergoing hemodialysis experience various problems that can arise from malfunctioning of the kidneys. This can be a physical stressor that affects various dimensions of a patient's life, including biological, psychological, social, spiritual (biopsychosocial). And patients may experience a lack of control or activities of daily life, loss of freedom, early retirement, financial stress, family disturbances, changes in self-image, and lack of self-esteem. This can lead to psychosocial problems, such as anxiety and depression, social isolation, loneliness, helplessness, and hopelessness. A study conducted in Pakistan explained that 65.9% of chronic renal failure patients undergoing hemodialysis therapy experienced anxiety and depression (Tanvir et al., 2013).

Based on research conducted by (Musa et al., 2015) which was carried out at the Hospital in Manado City, shows the level of anxiety of patients who are undergoing hemodialysis therapy, in patients with kidney failure it is explained that the percentage with severe anxiety is 79 people, those with moderate anxiety consist of 68 people and 42 people with mild anxiety. With a total population in the journal as many as 189 respondents. From these studies, it can be concluded that there are 53% of people who undergo hemodialysis therapy experience severe anxiety. A similar study was also conducted by (Jangkup et al., 2015) which was conducted at RSUP Manado City in this study showed the level of anxiety of chronic kidney failure patients undergoing hemodialysis with mild anxiety as many as 11 people, and 6 people experiencing moderate anxiety. and 1 person experiencing severe anxiety. Based on the series of descriptions above, this study aimed to determine the factors

associated with anxiety of hemodialysis patients

The aim of the study was to determine the factors associated with anxiety in hemodialysis patients

METHODS

Study Design

The research design used in this study was a correlation study with a cross-sectional approach

Setting

This data collection was carried out in May 2019 at Rumkit TK II Dr. Soepraoen Malang with 34 respondents.

Research Subject

The sampling technique in this study uses the nonprobability sampling method utilizing Accidental Sampling. The sample of this study were patients who underwent hemodialysis one and two times a week at the hospital in Malang a total of 34 respondents. The inclusion criteria in this study were as follows: Willing to be a respondent, Patients who are currently undergoing hemodialysis therapy (HD) at dr. Soepraoen Malang, patients who undergo therapy with a frequency of once and twice a week, can be invited to communicate verbally. The exclusion criteria in this study were as follows: Patients who were undergoing hemodialysis therapy experienced dizziness, nausea, and impaired consciousness

Instruments

The questionnaire used for this study was modified and guided by the Hospital Anxiety and Depression Scale (HADS). This questionnaire is used to measure anxiety in hemodialysis patients (Snaith, 2003). It consists of a total of 14 questions with 7 questions each related to anxiety and depression. In this study used anxiety questions. The HADS results are divided into 3 categories - normal, borderline, and abnormal. However, subjects with a borderline score (who were likely to be depressed and/or anxious) were categorized as

abnormal depending on the clinical importance of their condition (Bawazier et al., 2018).

Data Analysis

The statistical test used in this study was the Fisher's Exact test. Fisher's Exact Test is a test used to perform analysis on two smaller number of independent samples classified into a 2x2 contingency table. With a significance value ($\alpha = 0.005$). From the results of this statistical test, it can be seen the significance level of the relationship between the two variables. which is calculated using computerized assistance with the SPSS application (Statistic Product for the Social Science).

Ethical Consideration

This research has obtained Ethical Clearance at the KEPK Faculty of Medicine, the University of Muhammadiyah Malang with No: E.5.a / 067 / KEPK-UMM / V / 2019.

RESULTS

This data collection was carried out in May 2019 at Rumkit TK II Dr. Seopraoen Malang with 34 respondents.

Table 1. Respondent characteristics (n=34)

Variables	N	%
Gender		
Male	10	29.4
Female	24	70.6
Age		
17-25 years old	1	2.9
26-35 years old	3	8.8
36-45 years old	9	26.5
46-55 years old	9	26.5
56-65 years old	10	29.4
>65 years old	2	5.9
Educational Level		

Variables	N	%
No education	1	2.9
Elementary school	19	55.9
Junior high school	8	23.5
Senior high school	4	11.8
University	2	5.8
Working status		
Housewife	9	27
Public servant	3	9
Farmer	3	9
Labor	1	1
Privet sector	6	18

Source: Primary Data of Questionnaire, 2019

Based on table 1, it is found that out of 34 respondents, the majority are female (70.6%), in the age range 56-65 (29.4%), and the educational characteristics of the majority of respondents are elementary school educated (55.9%). Characteristics of respondents based on work note that most respondents are not having a job as many as 12 people (34%).

Table 2. Characteristics of respondents based on Hemodialysis frequency (n=34)

Hemodialysis frequency	N	%
Once a week	6	18
Twice a week	28	82

Source: Primary Data of Questionnaire, 2019

Table 2 showed that on the characteristics of the hemodialysis time, the majority of respondents who hemodialysis 2 times a week from the results of the research data on the characteristics of respondents based on the time of hemodialysis, it is known that respondents who undergo hemodialysis 2 times a week are the most dominant, namely 28 people (82%) and while for respondents who undergo hemodialysis once a week, namely as many as 6 people (18%).

Table 3. Characteristics of respondents based on the duration of Hemodialysis (n=34)

Duration of Hemodialysis	N	%
≤ 6 months	19	55.9
> 6 months	15	44.1

Source: Primary Data of Questionnaire, 2019

Based on table 3, the characteristics of respondents based on the length of undergoing hemodialysis are the most respondents who have undergone hemodialysis <6 months as many as 19 people (55.9%) of respondents.

Table 4. Anxiety in Hemodialysis Patients

Category	N	%
Normal	14	41.2
Abnormal	20	58.8
Total	34	100

Source: Primary Data of Questionnaire, 2019

Table 4 shows that the majority of respondents experienced anxiety as much as 20 (58.8%).

Table 5. Factors Associated with Anxiety of Hemodialysis Patients

			Anxiety		Total	P
			Normal	Abnormal		
Hemodialysis frequency	Once a week	N	4	2	6	0.173
		Expected count	2.5	3.5	6.0	
		%	66.7	33.3	100	
	Twice a week	N	10	18	28	
		Expected count	11.5	16.5	28.0	
		%	35.0	64.3	100	
Duration of Hemodialysis	< 6 months	N	4	14	18	0.020
		Expected count	7.4	10.6	18.0	
		%	22.2	77.8	100	
	> 6 months	N	10	6	16	
		Expected count	6.6	9.4	16.0	
		%	62.5	37.5	100	
Working status	Not working	N	6	15	21	0.062
		Expected count	8.6	12.4	21.0	
		%	28.1	71.4	100	
	Working	N	6	7	13	
		Expected count	5.4	7.6	13.0	
		%	61.5	38.5	100	

Table 5 shows the results of calculations using Fisher's exact test, the p-value = 0.020, thus the p-value α (0.020 < 0.05) so that H1 is accepted. This implies that there is a relationship between the length of hemodialysis and the anxiety level of hemodialysis patients

DISCUSSION

The Relationship between Hemodialysis Frequency and Hemodialysis Patient Anxiety

The results of the bivariate analysis that have been carried out from the characteristics of the respondents showed that there was no relationship between the frequency of hemodialysis and the anxiety of hemodialysis patients. However, the results showed that the majority of respondents who felt anxiety experienced by patients who underwent hemodialysis twice a week were 18 people (84.3%). Anxiety can be caused by psychological and physical factors.

Psychological factors that cause anxiety in hemodialysis patients are changes that occur in their lives such as the implementation of dialysis which must be done continuously every two times a week and a state of dependence on dialysis machines throughout their life, this triggers boredom in hemodialysis patients and feelings of worry about the disease. Lasting or persistent. Physical factors that cause anxiety include the environment and health status, the atmosphere of the room environment where many tools are not recognized by the patient, both in the form of sound and the number of devices that are attached to the patient's body, causing the patient to feel afraid and anxious. Health status related to the disease suffered by hemodialysis patients is a terminal disease condition and cannot be cured anymore, this can cause anxiety in the individual or patient (Espahbodi et al., 2015). Similar findings are obtained from (Nurchayati, 2016), who explained that there is no relationship between anxiety and quality of life in patients with chronic renal failure. Researchers assume that the frequency of running hemodialysis therapy has no relationship with anxiety, but many

other factors influence it, such as the respondent's knowledge of the disease itself.

Relationship Duration of Hemodialysis with Hemodialysis Patients Anxiety Levels

The results of the research were seen that 14 respondents experienced abnormal anxiety. Respondents who have long undergone hemodialysis have 6 respondents who experience abnormal anxiety. From the results of the statistical test, it was found that Fisher's exact value = 0.020 means that it can be concluded that there is a relationship between the length of undergoing hemodialysis and the level of anxiety of hemodialysis patients. In line with previous study reported that the most influential factor related to anxiety is duration of hemodialysis (Dame et al., 2022).

The anxiety of chronic renal failure patients is related to the length of undergoing hemodialysis, the longer the patient undergoes hemodialysis, the respondent will be able to adapt to the dialysis device/unit (Suliswati, 2014). The results of this study are in line with the research of Musa (2015) which reported that there was a relationship between hemodialysis (including acute and chronic) and the level of anxiety in patients with kidney failure (Musa et al., 2015). The same study was conducted by (NA et al., 2012) who reported that patients who performed hemodialysis with a long frequency of > 6 months would experience mild anxiety, while those with a period and frequency <6 months experienced moderate-severe anxiety. Anxiety cases studied by Tokala (2015) revealed that respondents who underwent hemodialysis > 6 months had a mild level of anxiety compared to respondents who underwent hemodialysis <6 months (Tokala et al., 2015). This study in line with a previous study reported that there is a significant relationship between the period of undergoing hemodialysis with the anxiety of patients with chronic kidney disease $p = 0.02$ (<0.05) (Alfikrie et al., 2020). This research is also not in line with research conducted by Jangkup (2015). revealed that respondents who underwent hemodialysis > 6 months had a mild

level of anxiety compared to respondents who underwent hemodialysis <6 months (Jangkup et al., 2015).

When looking at the data about the length of time undergoing hemodialysis with anxiety, patients with hemodialysis duration <6 months have more anxiety, even in the first months of the hemodialysis process, some patients' partners immediately expressed severe anxiety. This is because the anxiety experienced by the patient's spouse is still in the adjustment stage. After all, the respondent has just faced a hemodialysis process like this. At the length of hemodialysis > 6 months, most of the patient's partners began to feel less anxious about this condition. This is because the patient's spouse has surrendered and is accustomed to the hemodialysis process that a patient with chronic kidney disease is undergoing. Previous study reported that only the prevalence of anxiety and the length of hemodialysis were linked to depression (Marthoenis et al., 2021).

Relationship Working status with Hemodialysis Patient Anxiety Level

Based on the results of the bivariate test analysis, it was found that there was no relationship between work and the anxiety level of hemodialysis patients. Following the results of the study, the majority of respondents who did not have a job, the most dominant experienced anxiety as many as 21 (71.45%) people. So that researchers assume this is closely related to economic status. Where the majority of respondents with an income <1,000,000, the most dominant experience anxiety, namely as many as 11 people (52.9%).

Similar research was also conducted by Pratiwi (2017), arguing that a person's low economic status will cause that person to experience anxiety easily. The emergence of this feeling of anxiety can also be caused by the absence of activities that can divert from feeling uncomfortable during treatment and respondents who do not work also feel a burden on the family's responsibility because of the hemodialysis costs that will be carried out (Pratiwi et al., 2017). A similar study conducted

by Ginting, et al., (2013) at PGI CIKINI Hospital, Central Jakarta, obtained a P-value of 0.2, which means that there is no significant relationship between work and anxiety levels (Ginting & Wardani, 2013).

CONCLUSION

There is a relationship between the length of hemodialysis and the anxiety level of hemodialysis patients. Meanwhile, job status and hemodialysis time had no relationship with the anxiety level of hemodialysis patients.

SUGGESTIONS

Further research could be adding the number of participants for the next research. Also, further study should be explored more about other factors that might associate with anxiety in this group.

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DECLARATION OF CONFLICTING INTEREST

There is no conflict of interest in this study

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AUTHOR CONTRIBUTION

Zaqqi Ubaidillah:

The main conceptual ideas and proof outline wrote the manuscript

Anggraini Dwi Kurnia:

Data collection, helped prepare research report

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