FACTORS ASSOCIATED WITH ANXIETY IN PATIENTS WITH CHRONIC KIDNEY DISEASE UNDERGOING HEMODIALYSIS: A CROSSECTIONAL STUDY

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ABSTRACT
Anxiety is an individual response to an unpleasant condition experienced by patients with chronic kidney disease undergoing hemodialysis. The purpose of this study was to identify factors associated with anxiety in patients with chronic kidney disesase undergoing hemodialysis at the Yarsi General Hospital in Pontianak. Analytic observational research using cross-sectional methods. A total of 77 subject were selected and were analyzed using the chi-square statistical test. The results showed there was no significant relationship between age p = 0.470 (α> 0.05), gender p = 0.532 (α> 0.05), p = 0.382 marital status (α> 0.05), education p = 1.0 (α> 0.05), occupation p = 1.0 (α> 0.05) with the level of anxiety of patients with chronic kidney disease undergoing hemodialysis. There is a significant relationship between the period of undergoing hemodialysis with anxiety of patients with chronic kidney disease p = 0.02 (<0.05). The results of this study indicate that patients undergoing hemodialysis are very susceptible to anxiety disorders. So, we need early screening to detect anxiety disorders in a population of patients with chronic kidney disease undergoing hemodialysis.

INTRODUCTION

Chronic kidney disease (CKD) is a slow, progressive, irreversible condition in which the kidney's ability to function ultimately deteriorates (White, *et al*, 2013). The prevalence of CKD increases with increasing population of the elderly and the incidence of diabetes mellitus and hypertension. About 1 in 10 of the global population suffering from CKD in a particular stadium. The results of a systematic review and meta analysis show that the global prevalence of CKD is 13.4% (Hill, et al, 2016). In Indonesia, CKD is a disease with the second largest amount of funding from the Health Social Insurance Agency after heart disease. There were 30,554 active patients undergoing dialysis in 2015, most of them were patients with CKD (Kemenkes, RI 2017).

The prevalence of PGK in West Kalimantan in 2013 reached 2.0 per mile, in 2018 reaching 3.8 per mile (Riskedas, 2018). At YARSI General Hospital in Pontianak, the prevalence of chronic kidney disease in 2018 who undergoing hemodialysis every month was 88 patients. This number is predicted to continue to increase along with an increase in risk factors for non-communicable diseases such as hypertension and diabetes mellitus.

Late stage chronic kidney disease with glomerular filtration rate <15 ml / minute requires kidney replacement therapy, one of which is hemodialiasis. Hemodialysis is a substitute therapy for kidney function using a special tool with the aim of removing uremic toxins and regulating body electrolyte fluids (Smeltzer, *et al* 2010). Patients requiring long-term haemodialysis are often concerned about the unpredictability of the illness and the disruption of their lives. The amount of time required for dialysis and doctor visits and being chronically ill can create conflict, frustration, guilt and depression. It may be difficult for the patient, spouse and family to express anger and negative feelings (Farrell, 2017). This is a threat to physical integrity and a threat to the integrity of the body system which is a trigger for anxiety (Stuart, 2013).

Anxiety is a common problem experienced by patients with chronic kidney failure undergoing hemodialysis therapy. The results of studies on patients undergoing hemodialysis showed 183 patients (100%) experienced anxiety (Kamil, Agustina, Wahid 2018). One of the effects of anxiety disorders is irrational behavior, conflict, disobedience, fear, inability to perform daily activities and feelings of fear of death (Kim & Yang 2015).

Anxiety experienced by patients with chronic kidney disease undergoing hemodialysis varies from mild, moderate, severe to panic. Patients who have just undergone hemodialysis have severe anxiety, fear of death, discomfort, nightmares, anxiety so that they are unable to perform daily activities. However, some patients also show different behaviors such as watching television and sleeping while undergoing hemodialysis.

These differences in behavior encourage researchers to explore what factors are associated with anxiety in chronic kidney disease patients undergoing hemodialysis at the Yarsi General Hospital in Pontianak.

METHODS

The design of this study was observational analytic with cross sectional method. This study looks for relationships between variables with other variables. The sample in this study must meet the criteria of 1) chronic kidney disease patients undergoing hemodialysis, 2) awareness, 3) age over 18 years. Data were collected from 77 respondents in March 2019. The instrument used to measure anxiety levels was the Hamilton Rating Anxiety Scale *(HARS)*. This instrument measures 14 dimensions that measure physical and psychological symptoms. There are 14 symptoms assessed in individuals who experience anxiety on the HARS scale. Each item observed was given a five-level score (Likert scale) between 0 and 4. The HARS assessment scale consists of anxiety and 14 items, including: 1) Anxiety, 2) Tension, 3) Fear, 4) Sleep disturbance, 5) Impaired intelligence, 6) Depression, 7) Somatic symptoms, 8) Sensory symptoms, 9) Cardiovascular symptoms, 10) Respiratory symptoms, 11) Symptoms gastrointestinal, 12) Urogenital symptoms, 13) Vegetative symptoms, 14) Behavior during an interview.

Data obtained by giving questionnaires to respondents who underwent hemodialysis with porpusive sampling techniques guided by the criteria. Respondents who had met the criteria were given time to complete the questionnaire. The data obtained were then analyzed using the chi-square test.

RESULTS

Table 1 shows the results of the study 37.7% of the pre elderly (45-59) years old, 50,6% male, 75,3% married, 59,7% working, 81,8% higher education, and the duration of hemodialysis less than from one year 50,6%.

Table 1. Characteristics of patients undergoing hemodialysis

No	Variabel	f	%
1	**Age**		
	Adult	27	35,1
	Pre elderly	29	37,7
	Elderly	21	27,2
2	**Gender**		
	Male	39	50,6
	Female	38	49,4
3	**Marital Status**		
	Merried	58	75,3
	Not married / Divorced	19	24,7
4	**Occupation**		
	Work	46	59,7
	Does not work	31	40,3
5	**Education**		
	Low education	14	18,2
	Higher education	63	81,8

6	**Hemodialisys Duration**		
	≤ 1 year	39	50,6
	>1 year	38	49,4

Table 2. Relationships between age, sex, marital status, occupation, education, duration of hemodialysis and anxiety levels

Independent Variable	anxiety levels						*p Value*
	Low (Mild-Moderate)		High (Sever-panic)				
	n	%	n	%	n	%	
Age							
Adult	8	10,4	19	24,7	27	35,1	
Pre elderly	13	16,9	16	20,8	29	37,7	0,470*
Elderly	7	9,1	14	18,2	21	27,2	
	28	36,4	49	63,6	77	100	
Gender							
Male	16	20,8	23	29,9	39	50,6	
Female	12	15,6	26	33,8	38	49,4	0,532
	28	36,4	49	63,6	77	100	
Marital Status							
Merried	19	24,7	39	50,6	58	75,3	
Not married / Divorced	9	11,7	10	13,0	19	24,7	0,382
	28	36,4	49	63,6	77	100	
Occupation							
Work	17	22,1	29	37,7	46	59,7	
Does not work	11	14,3	20	20,6	31	40,3	1,0
	28	36,4	49	63,6	77	100	
Education							
Low education	5	6,5	9	11,7	14	18,2	
Higher education	23	29,9	40	51,9	63	81,8	1,0
	28	36,4	49	63,6	77	100	
Hemodialisys Duration							
≤ 1 year	16	20,8	23	29,9	39	50,6	
>1 year	12	15,6	26	33,8	38	49,4	0,02**
	28	36,4	49	63,6	77	100	
** pearson chi-square, **continuity correction dengan OR=0,26*							

Table 2 shows our findings there was no significant relationship between age p = 0.470 (α> 0.05), sex p = 0.532 (α> 0.05), marital status p = 0.382 (α> 0.05), education p = 1.0 (α> 0.05), occupation p = 1.0 (α> 0.05) with the level of anxiety disorders of chronic kidney disease patients undergoing hemodialysis. The results of the analysis of the relationship between the duration of undergoing hemodialysis with anxiety levels showed a significant relationship (p = 0.02) with patients undergoing hemodialysis less than one year having a risk of more than 0.26 experiencing higher anxiety when compared with patients who were undergoing hemodialysis is more than one year.

DISCUSSION

Analytic observational research was conducted to evaluate various factors related to anxiety in patients with chronic kidney disease undergoing hemodialysis. The results showed 37,7% of pre-elderly

age (45-59 years), 50,6% male, 75,3% married, 59,7% working, 81,8% higher education, and the duration of hemodialysis less than from one year 50,6%. The results of this study are consistent with previous research Kumar, Khandelia, Garg (2018) which shows that most respondents undergoing hemodialysis are men, aged less than 60 years with an average age of 49.3 years, the majority are married and some have high level of education and have a good job or have retired. This research also explains that most sufferers are housewives.

Our findings show that age, sex, marital status, and occupation are not related to anxiety in patients undergoing hemodialysis. the same research results also explain age, gender, marital status and occupation do not affect anxiety in patients with chronic kidney failure undergoing hemodialysis (Ng, et al, 2014). The same results by Alqarni, et al (2019) show a person's work does not affect anxiety in patients undergoing hemodialysis. The same opinion by Georgianni, et al (2017) that marital status is not significant to the anxiety of patients undergoing hemodialysis.

Anxiety may be caused by difficulty in adapting to the disease. Patients must receive life-threatening diagnoses and the need for lifelong care, dialysis therapy, adherence to diet and perceived complications (Cukor, et al. 2007). Patients undergoing hemodialysis require long-term treatment. Dialysis changes the lifestyle of patients and families. Some patients experience a 'sense of loss' of the integrity of the body's systems (Farrell, 2017). The patient feels the disease is difficult to cure and the course of the disease which requires undergoing hemodialysis therapy makes the patient feel uncomfortable.

The results of this study explain there is no relationship between the level of education and anxiety of patients undergoing hemodialysis. Similar results by Cantekin, et al (2014) that education is not significantly related to anxiety of patients undergoing hemodialysis. Then it has been explained in the study of Nisar, et al (2017), education did not significantly influence the incidence of depression in patients. The results of this study are consistent with our findings that education does not have a significant relationship to the level of anxiety disorders in patients.

The results of this study indicate a significant relationship between the hemodialysis period and the anxiety of patients undergoing hemodialysis. The results showed the period of undergoing hemodialysis ≤ 1 year tended to experience higher anxiety when compared to respondents who had undergone hemodialysis> 1 year. The results of the same study conducted by Jangkup, et al. (2015) which showed that patients with chronic kidney disease who undergoing hemodialysis <6 months have severe anxiety levels compared with those undergoing hemodialysis > 6 months had lower anxiety.

The cause of anxiety experienced by patients having initial hemodialysis therapy is shock diagnosed with chronic kidney disease and initial pain from dialysis procedures (Goyal, et al. 2018). In the early stages of patients undergoing dialysis therapy changes in lifestyle such as changes in diet, physical disorders, and changes in income (Kumar, et al. 2003).

CONCLUSION AND SUGGESTION

The results of this study indicate that patients undergoing hemodialysis are very susceptible to anxiety disorders. In addition, there are factors that contribute to anxiety disorders. Thus, early screening for anxiety disorders in the population of chronic renal failure undergoing hemodialysis is required. This research was carried out only in the scope of certain populations, so it cannot be generalized based on the characteristics of other places, regions and regions. Research in a larger sample size can be carried out in West Kalimantan Province by involving all hospitals that have hemodialysis services for patients with chronic kidney failure.

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