

SYMPTOM BURDENS AMONG CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HAEMODIALYSIS

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ABSTRACT

Background: The number of patients with chronic kidney diseases keeps growing. Most of the patients received haemodialysis. Despite its benefits, haemodialysis also causes adverse effects which stimulate several disturbing symptoms for patients.

Objective: This study was to portray the main symptoms burdening CKD patients with haemodialysis.

Methods: A descriptive study investigated the symptom burden experienced by 99 CKD patients undergoing haemodialysis. The Dialysis Symptom Index (DSI) was used for assessing experienced burden symptoms.

Results: at least 14 symptoms have burdened more than half of respondents. The big three main symptoms were found. The first common symptom experienced by respondents was fatigue and loss of energy 75.76%, followed by dry skin and decreased sexual interest by a similar percentage 66.67%.

Conclusion: Chronic illness patients who underwent haemodialysis were mainly burdened with symptoms such as fatigue, lack of energy burdened dry skin and lack of sexual interest. Nurses should keep alert toward burdened symptoms otherwise those will interfere with their quality of life.

KEYWORDS

chronic kidney disease; DSI; haemodialysis; quality of life; symptom burden

INTRODUCTION

Chronic Kidney Disease (CKD) patients complain of several symptoms that affect their quality of life. Recent literature studies have found complaints experienced by CKD patients include fatigue or loss of energy, drowsiness, pain, and itching. However, this literature study states that little is known about the symptoms experienced by CKD patients in stages 4 and 5 (Almutary et al., 2013). CKD stage 4 and 5 patients generally receive haemodialysis therapy to reduce complaints and improve quality of life. This concept is related to emotional reactions to life, feelings of fulfilment and

satisfaction, job satisfaction and personal relationships (Theofilou, 2013). Since fatigue and loss of energy have dominated consistently most symptoms among patients (Limjong et al., 2020), and it was persistent among the Indonesia population (Pio et al., 2022). This would be challenging for improving patients' life quality in Hospital Margono, which is the only reference hospital in the southern area of central Java.

The inability to adapt positively may cause stress, anxiety, depression, and even reduced quality. Anxiety is a deep, ongoing feeling of worry

(Hawari, 2001). Anxiety is a bad outcome for CKD patients. Fatigue and loss of energy have decreased vitality and may increase anxiety in CKD patients and decline patients' life quality (Huang et al., 2021), including patients with hemodialysis in Margono Hospital. How the symptom burden among hemodialysis patients at Margono Hospital was in demand for investigation.

MATERIALS AND METHOD

This study was conducted at a state-referred hospital in central Java. Ethical principles were reviewed by the Hospital Margono Soekardjo ethical committee, issued number 420/19436. A total of 99 chronic kidney disease patients who underwent haemodialysis participated in the survey. The sample was collected consecutively from September to November 2023. Inclusion criteria included patients with CKD, who had undergone hemodialysis for three months. Symptoms were observed using the Dialysis Symptom Index (DSI). Thirty symptoms registered were investigated. A Univariate analysis was conducted, and Cross-tabulation was applied to describe the proportion of burden symptoms based on individual characteristics.

RESULTS AND DISCUSSION

Results

Ninety-nine respondents participated in the study. Male patients are slightly higher than females, and patients have undergone hemodialysis for less than two years on average. The age average of patients seemed younger than in previous studies, see Table 1.

Table 1 Respondent Characteristics (n=99)

Characteristic	f	%	Mean (SD)
Sex			
Female	49	49.5	
Male	50	50.5.8	
Age			49.73 (\pm 11.8)
HD period (year)			1.95 (\pm 2.23)

Table 2 provides an overview of the symptoms most often felt by most respondents in order. Fourteen of thirty symptoms are experienced by over half of the respondents in this study. The three symptoms most often felt by respondents in order are fatigue and lack of energy, dry skin, and decreased sexual interest. While the symptom rarely felt by respondents is vomiting,

Discussion

This study portrays the characteristics of CKD patients undergoing haemodialysis. Three characteristics displayed are sex, age, and period of haemodialysis. The ratio of female and male patients is relatively similar, 49 out of 50. This finding opposes previous studies that CKD is a gender-related disease, and mostly affects females (Hill et al., 2016). The current report on CKD in the USA shows female population dominate the CKD cases (Kovesdy, 2022). It seems that the prevalence of CKD continues to change globally as well as its morbidity and mortality. This finding may also impact hemodialysis service providers to prepare the service equally between both genders.

CKD seems to affect the younger population because of a stressful and unhealthy lifestyle. The

Table 2 Symptoms Burden

No	Symptom English	f	%
1	Feeling of fatigue or lack of energy	75	75.76
2	Dry skin	66	66.67
3	Decreased sexual interest	66	66.67
4	Tired or dizzy	65	65.66
5	Difficulty staying asleep	65	65.66
6	Difficulty falling asleep	63	63.64
7	Difficulty getting sexually aroused	63	63.64
8	Muscle cramps	55	55.56
9	Low appetite	53	53.54
10	Bone pain or squabbling	53	53.54
11	Swelling in the legs	52	52.53
12	Difficulty concentrating	52	52.53
13	Itch	51	51.52
14	Dry mouth	50	50.51
15	Cough	48	48.48
16	Pain in the muscles	47	47.47
17	Short breath	46	46.46
18	Irritable	43	43.43
19	Feelings of anxiety	40	40.4
20	Numbness or tingling in the legs	37	37.37
21	Chest pain	37	37.37
22	Headache	37	37.37
23	Feelings of sadness	37	37.37
24	Nauseous	36	36.36
25	Constipation	33	33.33
26	Worried	33	33.33
27	Nervousness	30	30.3
28	Restless legs or difficulty keeping feet still	26	26.26
29	Diarrheal	21	21.21
30	Vomit	18	18.18

findings of respondents' ages indicate this issue. The average age of this study is 49.7 years old and they have received haemodialysis for less than 2 years (Table 1). As a comparison, a study among the USA population in 2010 reported that 75% of the CKD population had been 50 years old or over (Myers et al., 2010). Then in 2021, the CDC reported

that the prevalence of CKD stage 1-4 among 18 patients increased (Centers for Disease Control and Prevention, 2021). This evidence confirms that CKD already affected younger populations. Unhealthy lifestyles such as sedentary life, malnutrition and stress may be responsible for the earlier incidence of CKD because younger people have been exposed to cardiovascular problems due to smoking, obesity, or diabetes (Stengel et al., 2003) while those are contributors to CKD cases (Hall et al., 2014).

CKD patients still suffer from symptom burden after undergoing hemodialysis. Nearly half of the registered symptoms evaluated in this study, 14 out of 30 symptoms, have been experienced by more than half of the respondents (Table 2). This finding is relatively similar to the current survey in 13 hospitals in Jordan (Karasneh et al., 2020). These symptoms are a residue of the comorbid and the adverse effects of hemodialysis as predictors of symptom burden among CKD patients.

The three most prominent symptoms experienced by patients are a sense of fatigue and less energy, dry skin, and degression of sexual interest may relate to anaemia and fluid balance. Feeling fatigued and less energy is the most burdened symptom among CKD patients receiving hemodialysis (Table 2). To make a clearer portrait of fatigue, a crosstabulation was conducted to compare its severity based on respondent characteristics. According to the findings, it seemed that the burden (especially the feeling of fatigue and less energy varied based on age. Patients younger or equal than 40 years tend to suffer from the burden (table 3) However, this finding is needed for further

Table 3. Proporsion of Symptom Burden Severity according to Respondent Characteristics (N=99)

Karakteristik	Nothing	Less	Some	Fairly severe	Very severe	Total
	f (%)	f (%)	f (%)	f (%)	f (%)	
Jenis Kelamin						
Perempuan	16 (32.65)	16 (32.65)	9 (18.36)	4 (8.16)	4 (8.16)	49 (100)
Laki-laki	18 (36.00)	13 (26.00)	7 (14)	8 (16)	4 (8)	50 (100)
Usia						
<=40 tahun	29 (36.70)	26 (32.91)	11 (13.92)	7 (8.86)	6 (7.59)	79 (100)
>40 tahun	5 (25)	3 (15)	5 (25)	5 (25)	2 (10)	20 (100)
Lama HD						
<=1 tahun	19 (33.33)	18 (31.57)	9 (15.78)	7 (12.28)	4 (7.01)	57 (100)
>1.00	15 (35.71)	11 (26.19)	7 (16.66)	5 (11.90)	4 (9.52)	42 (100)

investigation.

Loss of body fluid and anaemia can be potential contributors to the emerging symptoms. The following five symptoms; tiredness and dizziness, sleeping disorder, muscle cramps, and low appetite, are also common as an effect of low haemoglobin plasma and lack of body fluid. anaemia causes cell aerobe metabolism to decrease and increase lactate acid instead of ATP (Hazin, 2020; Wong et al., 2020).

While most respondents suffer from symptoms that relate to anaemia and fluid balance, the hemodialysis provider should considerably pay attention to them. Otherwise, they will cause worse problems. A study reports that severe anaemia has a significant relationship to access durability (Locham et al., 2020). Moreover, besides the effect of pathological problems anaemia may be caused by improper procedures during the termination of the procedure such as inflammation (Chawla & Krishnan, 2009). When a patient suffers from anemia further adverse effects may come. Therefore, continued evaluation of perceived

symptoms and maintaining the quality of procedure hemodialysis are noteworthy.

Even though the result of this study indicated a clear symptom burden among CKD patients who underwent hemodialysis, the limitation should be considered. The response rate for this study was only 50 percent 99 out of 150 of the CKD population in this hospital, when the sample increase the proportion and severity of fatigue, dried skin, decreased sexual interest, and other symptoms might change, and the order was interchangeable.

CONCLUSION

The big three symptoms that burden chronic kidney disease patients undergoing haemodialysis are fatigue and lack of energy, dry skin, and decreased sexual interest respectively. Fourteen of thirty symptoms are dominant among over 50% of respondents. Haemodialysis providers are expected to monitor symptoms experienced by patients as well as maintain the quality of the procedure to prevent unexpected problems.

CLINICAL IMPLICATION

This finding confirmed that fatigue and feeling less energy are the main symptoms that burden hemodialysis patients. Besides keeping routine nursing care, nurses are recommended to provide suggestions on how to conserve energy during fatigue as well as overcoming anemia and controlling excessive body fluid. Offering various methods to increase Fe consumption will be significant. Further study may consider symptom burdens an influential factor for psychological outcomes.

ACKNOWLEDGEMENT

Acknowledgements are conveyed to Hospital Margono Soekardjo's director and staff who already permitted and helped with data collection. Jenderal Soedirman University provided funding for this study.

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