

INCREASED FLUID INTAKE IN PATIENTS WITH CHRONIC KIDNEY DISEASE UNDERGOING HEMODIALYSIS

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ABSTRACT

Introduction: Some of the main nursing problems that arise in patients with chronic kidney failure undergoing hemodialysis are problems with excess fluid volume. The aim of this study was to describe increased fluid intake in patients with chronic kidney disease undergoing hemodialysis at Ulin General Hospital of Banjarmasin.

Methods: This was a descriptive cross sectional study. 80 respondents were taken using consecutive sampling. The instruments used in this study were questionnaire of demographic, knowledge, attitude, family support, involvement of health workers and Inter-Dialytic Weight Gain (IDWG) calculation sheets.

Results: The results showed that the majority of respondents were women (53.8%), the education of respondents was high school (28.8%), the average age of respondents was 48.19 years old, most respondents had been undergoing hemodialysis for less than 12 months (57.5%), the frequency of hemodialysis was 2 times each week (93.8%), the level of knowledge was good (42.5%) and moderate (42.5%), the family support was good (86.3%), the attitude was positive (55%), the involvement of health workers was good (60%), and the majority of respondents had moderate IDWG criteria (47.5%).

Conclusion: Almost half of patients with chronic kidney disease who were undergoing hemodialysis at Ulin General Hospital of Banjarmasin had moderate IDWG which would render the treatment more complicated. Further study is needed to investigate related factors of excessive fluid intake in patients undergoing hemodialysis.

Keywords: chronic kidney disease, fluid intake, hemodialysis

INTRODUCTION

Chronic Kidney Disease (CKD) is a disorder of the kidney characterized by structural abnormalities or kidney function that lasts more than 3 months. CKD is characterized by one or more signs of kidney damage, namely albuminuria, urinary sediment abnormalities, electrolytes, histology, kidney structure, or the presence of a kidney transplant history, also accompanied by a decrease in glomerular filtration rate (1). The basic mechanism for CKD is tissue injury. Patients with chronic kidney disease to a certain degree require constant renal replacement therapy, in the form of hemodialysis or kidney transplantation (2).

Hemodialysis (HD) is the most widely used kidney replacement therapy. In this therapy, kidney function in cleaning and regulating plasma levels is replaced by a machine (3). Patients with kidney failure often find various types of nursing problems due to various complications such as hypotension, chest pain, nausea, vomiting, muscle cramps, and air embolism. But the nursing problem that is very often found in patients with chronic renal failure is the problem of excess fluid volume that is indicated by the presence of edema and decreased urine output. There are 3 main factors that affect excess fluid volume in patients with chronic renal failure: fluid intake, blood sugar, and sodium (4).

Previous research has suggested that there are several factors that influence fluid intake in patients with chronic renal failure, one of which is age, which is a strong factor in the level of patient compliance in controlling fluid intake needs (5). In addition, gender is also a dominant factor in influencing compliance with fluid intake (6). Education and knowledge and attitudes are also one of the factors that greatly influence the need for fluid intake because patients who have higher education will tend to have broader knowledge and allow patients to be able to control themselves in overcoming their problems. Factors that also influence the adherence of fluid intake to patients are family support, which is said to have a relationship between family support and adherence to fluid

intake in hemodialysis patients, but in the study it was said that there was no relationship between duration of hemodialysis and involvement of health workers in intake compliance fluids in patients with chronic renal failure. However, the involvement of health workers is needed by every patient in terms of providing health services, receiving information for patients and families, and further treatment plans (7).

Ulin General Hospital of Banjarmasin is the biggest Hospital in South Kalimantan. Nonetheless, study on factors related to increased fluid intake in patients undergoing hemodialysis has never been performed. The purpose of this study was to discover an overview of increased fluid intake in patients with chronic kidney disease undergoing hemodialysis at Ulin General Hospital of Banjarmasin.

METHODS

This was a descriptive cross sectional study. The target population was patients undergoing hemodialysis in the hemodialysis room of Ulin General Hospital of Banjarmasin. 80 respondents underwent hemodialysis during April 2019 and met inclusion criteria were taken using consecutive sampling. Written informed consents were obtained from all subjects before the study. The instruments used in this study were questionnaire of demographic, knowledge, attitude, family support, involvement of health workers arranged by the authors and Inter-Dialytic Weight Gain (IDWG) calculation sheets. The questionnaire had been tested for validity and reliability. Data were analyzed using descriptive statistics.

RESULTS AND DISCUSSION

Table 1. Age of Patients with Chronic Kidney Disease Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin (n = 80)

Variable	Min	Max	Mean	Modus
Age	25	60	48,19	60

As shown in table 1, the average age of patients with chronic renal failure undergoing hemodialysis at Ulin General Hospital of Banjarmasin was 48 years old. The results of this study were in line with the research conducted by Aisara (2018) which found that the largest age group of patients with chronic kidney disease undergoing hemodialysis in dr. RSUP M. Djamil Padang was 40-60 years (62.5%) (8).

Increasing age shows a progressive decrease in Glomerular Filtration Rate (GFR) and Renal Blood Flow (RBF). The decrease occurs around 8 ml/ minute/ 1.73m² per decade since the age of 40 years (9).

Table 2. Gender of Chronic Kidney Failure Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin

Gender	n	%
Male	37	46,3
Female	43	53,8
Total	80	100

Based on the results of the study in table 2, the majority of patients with chronic kidney disease undergoing hemodialysis were 43 women (53.8%). Based on the study results of Fitri (2017) gender was the dominant factor influencing the compliance of fluid intake (6). This is in line with the research of Chan et al. (2012) which explain that fluid restriction compliance was influenced by gender. Women tends to be more obedient than men. This is because female patients are more aware and concerned about their health (10).

Table 3. Education Level of Chronic Kidney Disease Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin

Education Level	n	%
No Formal Education	1	1,3
Elementary	17	21,3
Junior High School	21	26,3
Senior High School	23	28,8
Undergraduate/ Bachelor	18	22,5
Total	80	100

As depicted in table 3, the majority of level of education in patients with chronic kidney disease undergoing hemodialysis was Senior High School (28.8%). Based on the previous study of Kamaluddin & Rahayu (2009) there was a relationship between education and adherence to fluid intake of hemodialysis patients. Patients who have higher education will have broader knowledge, allowing patients to be able to control themselves in overcoming the problems faced, have high self-confidence, experience, and have a right estimate of how to deal with the incident and easy to understand about what is recommended by health workers, and will be able to reduce anxiety so that they can help patients make decisions (7).

Table 4. Duration of Hemodialysis in Chronic Kidney Disease Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin

Duration of hemodialysis	n	%
Short (<12 months)	46	57,5
Moderate (12-24 months)	16	20,0
Long (>24 months)	18	22,5
Total	80	100

As shown in Table 4, most patients in this study had been doing hemodialysis for less than 12 months (57.5%). The duration of undergoing hemodialysis has an influence on knowledge and attitudes about those related to fluid intake. Every patient needs different time in their level of knowledge and attitude, the longer the patient undergoes hemodialysis, the more knowledge he can get and control fluid intake correctly. This is supported by Sapri's (2008) research that the longer patients underwent hemodialysis, the more obedient they were, because the patient had reached the receiving stage (11).

Table 5. Knowledge Level of Chronic Kidney Disease Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin

Level of Knowledge	n	%
Good	34	42,5
Fair	34	42,5
Bad	12	15,0
Total	80	100

As described in table 5, the majority of knowledge level in patients with chronic kidney disease undergoing hemodialysis in the Ulin General Hospital of Banjarmasin was good and fair (42.5%), respectively. Most patients had been informed about the disease and hemodialysis treatment that they must do. This is in line with the results of research conducted by Kurniawati (2018) which showed that the majority of respondents undergoing hemodialysis had good knowledge about limiting fluid intake (12).

The level of knowledge can be influenced by information received by respondents about dietary fluid intake that they must obey in undergoing hemodialysis therapy. The higher a person's knowledge about health, the higher the practice of health behaviors in healthy living (13).

Table 6. Attitudes of Chronic Kidney Disease Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin.

Attitude	n	%
Positive	44	55%
Negative	36	45%
Total	80	100

As depicted in table 6, the majority of respondents had positive attitude in limiting fluid intake (55%). The results of this study were in line with previous studies conducted by Desitasari, Utami & Misrawati (2014) which also showed that the majority of patients with chronic kidney disease undergoing

hemodialysis were positive towards fluid restriction (58.3%) (16).

Attitude is a process of evaluating an object that is accompanied by feelings and provides a basis for people to make a response or behave in the manner chosen. Attitudes can be influenced by several attributes, such as personal experience, social influence, culture, emotion, and education (13).

Table 7. Family Support in Chronic Kidney Disease Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin

Family Support	n	%
Good	69	86,3
Moderate	9	11,3
Bad	2	2,5
Total	80	100

As showed in table 7, family support for patients with chronic kidney disease undergoing hemodialysis in Ulin General Hospital of Banjarmasin was in the good category (83.2%). Based on the study result, there were 49 respondents (61.3%) who were accompanied by their partner during the hemodialysis process. The Family becomes a part of the patient who is the closest and cannot be separated (14). The patients will feel happy and at ease when they receives attention and support from their family, because their support will lead to his confidence to deal with or manage his illness well. Thus, the patients are able to follow the suggestions given by the family to support the management of the disease (15). Attention, assistance and assessment from the family have great impact to the patient during the treatment (7).

Table 8. Involvement of Health Workers in Arranging Fluid Intake of Chronic Kidney Disease Patients Undergoing Hemodialysis at Ulin General Hospital of Banjarmasin

Involvement of Health Workers	n	%
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Good	48	60
Moderate	24	30
Bad	8	10
Total	80	100

As depicted in table 8, the involvement of health workers in regulating fluid intake of patients with chronic kidney disease undergoing hemodialysis at Ulin General Hospital of Banjarmasin was in a good category (60%). Most nurses in hemodialysis room had associate degree in nursing, and only chief nurse and clinical instructures who had bachelor degree.

The involvement of health workers is considered as an effort or interference from health workers in improving the quality of life of patients to be better. It can be in the form of health information given to individuals, motivation given to individuals, helping to control risk factors that can occur to individuals, and always reminding individuals to comply with the treatment regimen being undertaken (7).

Table 9. Increased fluid intake in patients with chronic kidney disease undergoing hemodialysis at Ulin General Hospital of Banjarmasin

Increased Fluid Intake	n	%
Mild	28	35
Moderate	38	47,5
Heavy	14	17,5
Total	80	100

As depicted in table 9, increased in fluid intake in patients with chronic kidney disease patients undergoing hemodialysis at Ulin General Hospital of Banjarmasin based on Interdialytic Weight Gain (IDWG) values was in the moderate category (47.5%).

A study by Kamaluddin & Rahayu (2009) about the analysis of factors that influence fluid intake in kidney failure patients was stated that 68.62% of respondents was good at reducing fluid intake (7). The

respondents from previous study had different range of characteristic with this study. The biggest difference was that 97% of subjects in previous study had advance education level and obeyed the regiment while the characteristic of education in this study showed only 51.3% of respondents who had higher education level.

Kozier et al. (1991) grouped the increase in hemodialysis client weight gain between two dialysis times or Interdialytic Weight Gain (IDWG). It is divided into 3 categories; mild (if the addition reaches 2% of dry weight), medium (if the addition reaches 5% of dry weight) and heavy category (if the addition reaches 8% of dry weight). The average scores of IDWG in this study was 2.85%. Gaining less than 2% of dry weight is expected during hemodialysis treatment.

Excess fluid intake in patients with chronic kidney disease can be prevented by taking fluids every day from 500 to 750 ml, which is added by the number of urine production situations. Daily intake of sodium 80-110 mmol, will be sufficient to control thirst and help patients to regulate fluids (15).

CONCLUSIONS

In summary, the majority of respondents in this study were women (53.8%), the education of respondents was high school (28.8%), the average age of respondents was 48.19 years old, most respondents had been undergoing hemodialysis for less than 12 months (57.5%), the frequency of hemodialysis was 2 times each week (93.8%), the level of knowledge was good (42.5%) and moderate (42.5%), the family support was good (86.3%), the attitude was positive (55%), the involvement of health workers was good (60%), and the majority of respondents had moderate IDWG criteria (47.5%).

Almost half of patients with chronic kidney disease who were undergoing hemodialysis at Ulin General Hospital of Banjarmasin had moderate IDWG which would prompt the treatment more complicated. Further study is needed to investigate related factors of

excessive fluid intake in patients undergoing hemodialysis.

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