

ORIGINAL ARTICLE

FLUID ADHERENCE LEVEL AMONG PATIENTS UNDERGOING WITH HEMODIALYSIS

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ABSTRACT

Hemodialysis is commonly provided for three times per week to disposal of analyzed waste and fluid volume in the body. Fluid elimination has a risk for fluid excessive in inter-dialytic. The study aimed to determine the level of fluid restrictions among hemodialysis patients. A descriptive study was applied to describe the level of fluid restriction. Fifteen samples were selected using purposive sampling. The findings explained that more than half of patients have poor adherence to restrict the fluid. Around 46% of patients have fair level adherence on fluid

Keywords: hemodialysis, interdialytic weight gain, adherence to fluid restriction

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Introduction

Permanent kidney function damage in end-stage renal disease (ESRD) patients requires renal replacement therapy to maintain kidney work [1]. Kidney replacement therapy consists of peritoneal dialysis and hemodialysis [2]. Hemodialysis is given intermittently three times per week for 3-5 hours per session to remove waste from the body's metabolic waste and regulate fluid volume in the body [3]. Elimination of fluids carried out during hemodialysis sessions can be at risk for inter-dialytic fluid overload [4]. Fluid management is needed to create fluid restriction adherence, improve quality of life, and minimize complications [5].

Patient adherence in carrying out fluid restrictions was evaluated by inter-dialytic weight gain (IDWG). IDWG was measured based on dry weight or post-dialysis body weight in the previous session, reduced the pre-dialysis weight of the next session [6]. The average IDWG for three hemodialysis sessions can conclude fluid restriction adherence [7]. The value of adherence based on the IDWG category is as follows; 1) Good adherence with

IDWG 1 Kg, 2) Fair adherence with IDWG 1 - 2 Kg, and 3) Poor adherence with IDWG > 2 Kg [8].

Hemodialysis patients in America do not adhere to fluids in the amount of 7.9% to 8.5%, while in Japan and Europe which increases with an increase of 9.7% to 49.5%, then when the diet is allowed to be rejected from 9% to 22, 1% [9].

While from the literature, it has been reported that fluid restriction adherence in HD patients correlates with patient demographics with predictors of age, sex, occupational status, smoking history, dialysis time, and ethnicity. The main factors that predict disobedience are young age and smoking [9]. While evidence of higher adherence is reported in those who are older, low comorbidities, and high socioeconomic status [10]. In general, studies related to fluid restriction in hemodialysis patients only examine adherence to the patient demographics; only a few studies have examined the adherence with the characteristics of hemodialysis patients. Therefore, to improve the understanding of hemodialysis and patients' adherence to fluid restriction in this study population explored the adherence of hemodialysis patients in fluid restriction and the characteristics of hemodialysis patients.

Objectives

The study aimed to describe the level of fluid restrictions among hemodialysis patients.

Methods

A descriptive study to describe the level of fluid restrictions among hemodialysis patients. Fifteen hemodialysis patients were selected using a purposive sampling technique. This study was conducted at East Java branch dialysis patient communities. The inclusion criteria of selecting samples as follows: 1) more than six months of doing hemodialysis, 2) aged more than 20 years old, 3) active to participate in East Java branch dialysis organizations. Patients who have to hospitalized for any reason and undergoing continuous ambulatory peritoneal dialysis (CAPD) and suffered kidney transplantation were excluded in this study.

The study was conducted between January 20 to March 20, 2019, in East Java branch of Indonesian dialysis organization, This research has been declared ethical conduct by the Ethics Commission of the Faculty of Nursing, Airlangga University. Informed concern was obtained from all patients before data collection.

Result

Characteristics of sociodemographic

Table 1 showed that 40% of patients who took for hemodialysis were 36-45 years old. Most of them were female (60%), and 40% of them were male. More than half of them graduated from the bachelor's level (53.3%) and followed by a high school level (26.7%).

Table 1. Characteristics of hemodialysis patients based on sociodemographic

Sociodemographic	n	%
Age		
17-25 years	1	6.7
26-35 years	4	26.7
36-45 years	6	40
46-55 years	1	6.7
56-65 years	3	20
Gender		
Male	6	40
Female	9	60
Education		
Primary school	1	6.7
Junior high school	2	13.3
High school	4	26.7
Bachelor	8	53.3

Health information of patients

Table 2 showed the clinical information among patients. The findings showed that Some of them hemodialysis have comorbidity diseases such as hypertension and Diabetes Mellitus. About 46.7% have a history of taking herbal medicine, prolonged antibiotic consumption, continued anti-pain use. Regarding the duration of hemodialysis, most patients have been taken hemodialysis with 1 to 5 years. The frequency of receiving hemodialysis was twice per week (86.7%).

Table 2. Characteristics of hemodialysis patients based on clinical history

Clinical History	N	%
Comorbidity history		
Hypertension	4	26,7
Diabetes mellitus	3	20
Nephrotic syndrome	1	6,7
Etc	7	46,7
Duration of hemodialysis		
Less than1 year/	5	33,3
1 – 5 years	6	40
5 – 10 years	1	6,7
>10 years	3	20
Frequency of hemodialysis		
Twice a week	13	86,7
Thrice a week	2	13,3

Level of fluid restriction

Table 3 showed the level of fluid restriction among patients with hemodialysis. The findings explained that more than half of patients have poor adherence to restrict the fluid. Around 46% of patients have good level adherence to the fluid. Details explanation was summarized in Table 3.

Table 3. Fluid adherence level based on IDWG

Fluid Adherence Level	IDWG (Kg)	n	%
Good adherence	1	0	0
Fair adherence	1-<2	7	46,7
Poor adherence	>2	8	53,3

Discussion

This study was conducted to describe the characteristics of hemodialysis patients related to fluid restriction adherence. Described based on the sequence of characteristics; age, gender, education, comorbidity history, duration of hemodialysis, frequency of hemodialysis.

Hemodialysis patients must control fluid intake if long-term excessive consumption of fluids will increase interdialytic weight gain (IDWG), cardiovascular morbidity, and mortality [10]. Because hemodialysis is a continuous therapy throughout life, therefore limiting fluid intake needs to be appropriately managed [11,12]. Poor adherence to fluid restrictions in this study included eight hemodialysis patients (53.3%), poor adherence or non-adherence with hemodialysis patients in regulating fluid restriction due to adapting failure and psychological burden (stress) to lifestyle changes in regulating dietary intake restrictions [13].

Characteristics of fluid non-adherence in hemodialysis patients according to reports demographic factors, such as; age, gender, smoking, duration of hemodialysis, perinatal illness, and lack of social support [14]. The majority of patients in this study were >36-45 years old, amounting to 5 (33.3%). Under the age of 51 years tend not to adhere to fluid restrictions because they consider their normal lives to be different while at an older age they are more following fluid restrictions because they see the aging process and the weaknesses of their health [15].

The sex of men at high risk undergoing fluid restriction non-adherence [8]. According to the study, there is no correlation between the education of hemodialysis patients with non-adherence with fluid restrictions [16]. Comorbidity history associated with non-adherence with fluid restriction is the status of diabetes Mellitus. Biologically, people with diabetes Mellitus often eat a lot; excessive food intake is associated with a higher amount of fluid intake with excess [17].

The long duration of hemodialysis shows a decreased level of adherence to therapeutic regimens, especially in fluid restriction [15,17]. Non-adherence with fluid restrictions is closely related to the frequency of hemodialysis. The right rate of hemodialysis for hemodialysis patients is three times a week for a maximum of four hours, which aims to eliminate uremic toxins and restore electrolyte balance [15,18]. While in this study, the majority of 13 (86.7%) hemodialysis patients performed hemodialysis with frequency twice a week.

Conclusion

Adherence with fluid and dietary restrictions relates to the characteristics of age, sex, comorbidity history, duration of hemodialysis, and frequency of hemodialysis, while education for hemodialysis patients is not associated with adherence with hemodialysis patients in fluid

restrictions. Interdialytic Weight Gain (IDWG) is not only related to fluid intake consumed but also dietary intake.

In this study, the duration of hemodialysis and frequency of hemodialysis can affect adherence, because the duration of hemodialysis in older HD patients already has experience in managing fluid restriction adherence, while fewer hemodialysis frequencies will affect fluid accumulation in the body. The limitation of this study is the small number of hemodialysis patients so that descriptive research cannot be generalized.

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