



RELATIONSHIP MOTIVATION WITH INTERDIALYTIC WEIGHT GAIN (IDWG) CHANGES IN CHRONIC KIDNEY DISEASE PATIENTS

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ABSTRACT	Keywords
Chronic kidney disease is a failure of kidney function to maintain metabolism, and balance of fluid and electrolytes due to the progressive destruction of kidney structure. Increased fluid volume must be limited. If there is excess can cause edema, tightness and decreased consciousness. Therefore, patient motivation is needed to control changes of Interdialytic Weight Gain (IDWG). The aim of this study is to prove the relationship of patient motivation with changes of IDWG in CKD patients. The design of this study was correlational analysis with a cross-sectional approach. The sampling technique used non-probability sampling type purposive sampling, 40 CKD patients undergoing hemodialysis therapy at the RSUD Bangil were enrolled in this study. Data collection was using a questionnaire. Data analysis was using Spearman rho statistical test, which showed a significance value of 0,000 that was smaller than alpha (0.05), so it can be concluded that there was a significant relationship between patient motivation and IDWG changes of CKD patients undergoing hemodialysis therapy. Strong motivation to undergo hemodialysis is important because hemodialysis has become a necessity for him, a treatment must be undertaken by patients with chronic kidney disease.	Motivation, Interdialytic Weight Gain (IDWG), Chronic Kidney Disease (CKD).

BACKGROUND

Chronic kidney disease (Chronic Kidney Disease / CKD) is defined as an irreversible and long-lasting kidney function disorder (Harrison, 2013). Medical management for patients with end-stage chronic renal failure is to provide renal replacement therapy, one of which is hemodialysis. In hemodialysis there is an ultrafiltration process, namely the withdrawal of the patient's body fluids that cannot be wasted due to decreased kidney

function. The amount of ultrafiltration is determined based on changes in Interdialytic Weight Gain (IDWG) (Mustikasari, 2017). Any decrease observed in IDWG, may be due to HD practices aimed at limiting IDWG or avoiding high IDWG (Wong et al., 2017). Patients with renal failure often have a volume-excess status. More specifically, increased ECW in dialysis patients has been shown. 19,20 Constantly positive sodium balance induces ECW and excessive

hypertension in more than 90% of patients. (Hecking et al., 2018)

The increase in fluid volume must be limited because if it is excessive it can cause edema, shortness of breath, and even loss of consciousness. Therefore, patient motivation is needed to control changes in Interdialytic Weight Gain (IDWG) (Suharyanto, 2002). The relationship between Hb levels and mortality when considering interdialytic weight gain (IDWG) in blood sampling has not been studied. Therefore, the aim of this study was to evaluate the association between Hb levels and all-cause and cardiovascular mortality while adjusting for the effect of IDWG.juranl (Toida, Iwakiri, Sato, & Komatsu, 2017).

Based on the research of Qiao, Shan, Chen, & Xu, 2014 Adherence to limited fluids increased from 53.3% to 91.1%. Based on the research of Sakai et al., 2017 that nutritional counseling affects interdialytic weight gain (IDWG) and blood pressure. We investigated 48 hemodialysis patients whose mean monthly IDWG ratio for dry weight exceeded 5.1% and who did not have long-term hospital admission for 1 month. Based on the research of Rosdiana, Cahyati, & Hartono, 2018 that the level of education in hemodialysis patients has a positive effect on IDWG. According to the United State Renal Data System (USRDS) in the United States, cases of chronic kidney disease in the world are increasing, from 38% in 2013 to 50% in 2015, the average prevalence of chronic kidney disease increases by 20% - 25% every year. year. Based on data from ((IRR)., 2015). IRR (Indonesian Renal Registry) the number of new patients (patients who underwent dialysis for the first time) in 2007 amounted to 4,977 patients, in 2015 increased to 21,050 patients. For data on old patients (all patients, both new patients in 2015 and old patients from the previous year who were still undergoing

routine hemodialysis and were still alive until December 31, 2015), in 2007 there were 1,885 patients, in 2015 it increased to 30,554 patients. According to the results (Risksedas, 2013). The prevalence of Chronic Kidney Failure (CKD) based on doctor's diagnosis in Indonesia is 0.2%. The highest prevalence is in Central Sulawesi at 0.5% while in East Java it is at 0.3%.

According to data from the Bangil Hospital Medical Record, Pasuruan Regency in 2017, there were 13 outpatient patient visits that were diagnosed with CKD and 391 people with old cases. For inpatient care, there were 55 patients diagnosed with CKD. Meanwhile, in 2018, the number of CKD patients who made outpatient visits for new cases was 6 people and 358 old cases. As for inpatient visits, 37 patients were diagnosed with CKD.

Based on the results of a preliminary study conducted by researchers, it was found that the number of hemodialysis procedures in 2019 was 816 actions consisting of 15 new patients, 801 old patients. Meanwhile, in 2020 the number of hemodialysis procedures was 2189, consisting of 27 new patients and 2162 old patients. At the beginning of 2021 until February 28, 2021, there were 427 Hemodialysis procedures recorded. Based on the results of interviews with the head of the hemodialysis room in March 2021, the number of hemodialysis patients in December 2020 was 28 people, in January 2021 as many as 30 people, and in February 2021 as many as 40 people.

Management of patients with chronic kidney failure stage 5 based on the classification made by The Kidney Disease Outcome Quality Initiative (K/DOQI) is to provide renal replacement therapy, one of which is hemodialysis therapy. An increase in IDWG that exceeds 5% of dry body weight can cause various complications such as hypertension, intradialysis hypotension, congestive heart failure (Suharyanto, 2002).

A high IDWG is secondary to excessive fluid and/or food intake, the former being more important. It is estimated that 30%-60% of hemodialysis patients do not adhere to a fluid intake regimen (Bossola, Pepe, & Vulpio, 2018). One way to prevent an increase in Interdialytic Weight Gain (IDWG) is to increase patient understanding of the importance of limiting fluid intake in patients undergoing hemodialysis (Muttaqin, Arif & Sari, 2011).

METHODOLOGY

This study uses a correlational analytic research design. (Hidayat, 2010). The purpose of this study was to prove the relationship between motivation and IDWG changes in CKD . patients. The population in this study were all CKD patients undergoing hemodialysis therapy at Bangil Hospital, with an average number of 40 patients per month. In this study using a non-probability sampling technique purposive sampling type. The sampling technique that uses purposive sampling is in accordance with the criteria (Setiadi, 2013). In this study ,the sample was part of CKD patients undergoing hemodialysis therapy according to the inclusion and exclusion criteria. Inclusion criteria consisted of patients who could be weighed, patients who were able to communicate verbally, and patients who were obedient to hemodialysis. Execution criteria consisted of patients who underwent hemodialysis outside the schedule and patients who had decreased consciousness. The independent variable in this study was the motivation of CKD patients and the dependent variable in this study was the change in Interdialytic Weight Gain (IDWG) in CKD patients undergoing therapy hemodialysis. This research was conducted in the hemodialysis room at Bangil Hospital. The research time is from May - June 2021. Procedure Data collection was done by measuring the patient's weight

before the hemodialysis process and comparing it with the weight after the previous hemodialysis, then recording the results on the observation sheet and then giving a motivation questionnaire. There are 2 instruments used in this study, namely motivation based on Sobur's theory (2009) in the form of a questionnaire consisting of 5 positive statements and 5 negative statements and the instrument for Changes in interdialytic weight gain (IDWG) in the form of an observation sheet. . The data collection process was carried out by the research team assisted by the head of the room and the hemodialysis nurse at Bangil Hospital. After the data is collected, the researcher makes editing in the form of selecting the questionnaires obtained, all questionnaires are eligible to be processed, and re-checking the completeness of answers by respondents on the questionnaire. Then the spearman rho statistical SPSS version XII test was carried out (Nursalam, 2016).

RESULTS

Table 1 Characteristics of Respondents

General Data	Ket	F	%
Gender	Male	23	57.5
	Female	17	42.5
	Total	40	100
	SD	16	40
	SMP	5	12.5
	SMA	12	30
	PT	7	17.5
Gerder	Total	40	100
	< 30 years	7	17.5
	30-40 years	6	15
	41-50 years	12	30.5
	51-60 years	14	35
	>60 years	1	2.5
	Total	40	100

1. Motivation of CKD patients undergoing hemodialysis therapy at Bangil Hospital

Table 2 Crosstabulation of Patient Motivation with Changes in Interdialytic Weight.

Motivation	Changes IDWG			Total
	Light	Currently	Heavy	
Weak Motivation	0(0%)	0 (0%)	3 (33,3 %)	3 (7,5%)
Strong motivation,	27 (67,5%)	4 (10%)	6 (66,7 %)	37 (92,5%)
Total	27 (67,5%)	4 (10%)	9 (22,5 %)	40 (100%)

Based on the results of the study in table 2, it is known that most of the respondents have a strong motivation, as many as 37 (92.5%) respondents with changes in IDWG mostly heavy by 6 (66.7%) respondents. While the motivation is weak, there are no respondents who have weak motivation (0%), with changes in IDWG mostly heavy by 3 (7.5%) respondents.

DISCUSSION

1. Motivation of CKD Patients Undergoing Hemodialysis

Based on the results of the study in Table 2, it is known that most of the respondents have a strong motivation as many as 37 (92.5%) respondents. While the motivation is weak, there are no respondents who have weak motivation as many as 3 (7.5%). Motivation is one of the factors that affect adherence to hemodialysis (Nursalam, 2013). One of the factors that influence the motivation of the first patient is age. The more old enough, the level of maturity and strength of a person will be better in thinking and doing. In this study there are 3 respondents who have moderate motivation, two of whom are 23 and 31 years old. While the remaining 37 respondents have a strong motivation (Notoatmodjo, 2012). Respondents in this study were classified as adults, where at this

age a person's thought process can be said to be mature. Where the respondent should have been able to receive information or knowledge with a good understanding of chronic kidney failure and hemodialysis therapy which will increase the patient's motivation to undergo hemodialysis therapy (Sobur, 2009). The second factor that influences motivation is the level of education. It is undeniable that the higher a person's education, the easier it is for them to receive information, and in the end the more knowledge they have. On the other hand, if someone has a low level of education, it will hinder the development of a person's attitude towards receiving information and new values that are introduced (Uno, 2008). The educational background of the respondents in this study shows that their education includes high school education, where with this education the respondents should be easy to receive and understand information about chronic kidney disease and hemodialysis therapy so that it is expected to change the mindset that can strengthen the patient's motivation. (Azwar, 2008).

2. Changes in Interdialytic Weight Gain (IDWG) in CKD patients undergoing hemodialysis therapy at Bangil Hospital.

Based on the results of the study, it was found that more than half of the respondents were classified as experiencing mild changes in Interdialytic Weight Gain (IDWG), as many as 27 respondents or equal to (67.5%). Lindberg, 2010 explained that an increase in body weight of 1 kilogram is equal to 1 liter of water consumed by the patient). The recommended weight gain between hemodialysis sessions is between 2.5% - 3.5% of dry body weight to prevent the risk of cardiovascular problems IDWG 4% of DW was identified as an independent predictor of all-cause mortality and showed a threshold result limit for cardiovascular

mortality in patients with conventional HD. The occurrence of excessive IDWG in the presence of malnutrition represents a significant increase in the risk of death, indicating a subgroup of patients with a poorer prognosis. (Dantas, 2019). Interdialytic weight gain (IDWG) is a frequent problem experienced by hemodialysis patients worldwide. This problem basically caused by the inability of the excretory function of the kidneys, so regardless of the patient's fluid intake, weight gain will always be present. High IDWG was associated with high blood pressure before dialysis and increased mortality. (Ida Rosdiana, 2018). Various factors that influence IDWG include factors from the patient himself (internal) such as self-efficacy and external factors such as social and family support. Changes in Interdialytic Weight Gain (IDWG) experienced by respondents in this study were more than half classified as experiencing mild changes (Istanti, 2011). These conditions indicate that CKD patients who are undergoing hemodialysis at the Bangi I Hospital have high self-efficacy so that there is an inner strength to control the needs of body fluids that can affect changes in IDWG. (Price, Sylvia A & Wilson, 2006). In addition, respondents also have knowledge that is applied in regulating the fluids that enter their bodies during the interdialytic period (between two dialysis sessions), so that most of the patients who are respondents have mild changes in Interdialytic Weight Gain (IDWG), namely weight gain of less than 4% (Guidelines. , 2007).

3.Relationship between Patient Motivation and Changes in Interdialytic Weight Gain (IDWG) in CKD patients undergoing hemodialysis therapy at Bangil Hospital.

Based on the results of the study, it is known that most of the respondents have a strong motivation as many as 37 (92.5%) respondents with changes in IDWG mostly being heavy by 6 (66.7%) respondents. While the motivation is weak, there are no respondents who have weak motivation (0%), with changes in IDWG mostly heavy by 3 (7.5%) respondents. Apart from the cross tabulation results, there are also partial test results which show that patient motivation has a negative effect on changes in Interdialytic Weight Gain (IDWG) with a direct effect (β_2) of -0.483, with $p = 0.000$ and an Effective Contribution value of 32.04%. From these results it can be interpreted that the patient's motivation has a significant effect on changes in Interdialytic Weight Gain (IDWG), so it can be said that the stronger the patient's motivation will reduce the value of changes in Interdialytic Weight Gain (IDWG). (Ghozali, 2006).

Several factors that influence motivation include wants and expectations, as well as needs (Sardiman, 2007). Based on research conducted by (Istanti, 2011) stated that motivation is one of the factors that affect the compliance of CKD patients undergoing hemodialysis. Chronic kidney failure patients undergoing hemodialysis therapy need strong motivation to continue to undergo hemodialysis therapy regularly and adhere to fluid intake restrictions that can reduce the Interdialytic Weight Gain (IDWG) value (Friedman, M, 2010). Strong motivation to undergo hemodialysis is important because hemodialysis has become a necessity for him, which is a treatment that must be undertaken by patients with chronic kidney failure (Sardiman, 2007).

In addition to routinely undergoing hemodialysis therapy, strong motivation is also needed in order to arise compliance with fluid intake restrictions during inter-hemodialysis sessions. The addition of

excessive IDWG will cause symptoms of edema, shortness of breath, and discomfort. Therefore, strong motivation is needed to minimize IDWG changes. The combination of individual and group empowerment counseling improves self-efficacy, quality of life, clinical signs, hemoglobin levels and hematocrit levels in hemodialysis patients. (Moattari, 2012).

CKD patients must undergo hemodialysis, which is a therapy that cannot permanently cure or restore kidney function. However, the hemodialysis action can reduce the risk of damage to other vital organs due to the accumulation of toxins in the circulation. Hemodialysis is carried out using a machine equipped with a semi-permeable filter membrane (artificial kidney) (Muttaqin, Arif & Sari, 2011).

One way to prevent an increase in Interdialytic Weight Gain (IDWG) is to increase patient understanding of the importance of limiting fluid intake in patients undergoing hemodialysis which can lead to edema, shortness of breath, and even loss of consciousness. The most frequent effort is providing health education directly to patients and families at the time of hemodialysis. This is done so that patients and families know that family support and patient motivation are needed to control changes in Interdialytic Weight Gain (IDWG). (Perry, 2006). The majority of hemodialysis (HD) patients are overhydrated and have high interdialytic weight gain (IDWG) that induces an increase in blood pressure (BP). A positive sodium balance resulting from a high sodium diet, high dialysate sodium (DNa) concentration, or a combination of the two are the main causes of this disease. (KIM, kim, 2013)

However, in reality, there are still respondents who experience severe changes in IDWG even though they have strong motivation. This can be influenced by

possible factors such as thirst and stress. The respondent's thirst can arise because it is related to the level of activity or work undertaken daily so that the respondent cannot limit fluid intake. Another influencing factor is stress that occurs as a result of adjustment to illness which results in a series of behavioral changes, including feeling insecure, confused, losing freedom, long life expectancy so that it can lead to depression and in the end respondents stop monitoring fluid intake. This event can directly result in IDWG changes.

CONCLUSIONS

Strong motivation to undergo hemodialysis is important because hemodialysis has become a necessity for him, which is a treatment that must be undertaken by patients with chronic kidney failure.

SUGGESTIONS

1. For Hospital Agencies.

It is hoped that the hospital institution will be able to have a routine program in carrying out seminars or training to update information related to hemodialysis.

2. For nurses at Bangil Hospital.

Nurses are expected to know about what factors influence changes in Interdialytic Weight Gain (IDWG) so that it can be applied in providing nursing care to CKD patients by providing health education and support so that patients always adhere to diet and limit fluid intake.

3. For patients with chronic renal failure undergoing hemodialysis.

It is hoped that they will have a strong motivation to improve their quality of life.

Ethical Considerations

Based on the Permit for Research Implementation from LPPM STIKes Bina Sehat PPNI. Number: IV.a/56/LPPM-STIKES/IV/2020

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