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SELFCARE IN RELATION TO DIETARY COMPLIANCE FOR NUTRITION AND FLUID AMONG PATIENTS UNDERGOING HEMODIALYSIS

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ABSTRACT

The dietary intake of nutrients and fluids holds paramount importance for patients afflicted with chronic kidney disease undergoing hemodialysis, as it significantly influences their overall well-being and quality of life. Mismanaged nutritional and fluid intake may lead to adverse clinical consequences, including the development of ascites and edema. Furthermore, inadequate implementation of a well-balanced nutritional and fluid regimen can result in the depletion of muscle and fat mass, thereby impacting the daily functioning of individuals grappling with chronic kidney disease. The correlation between patients' adherence to such dietary protocols and their ability to autonomously manage self-care further underscores the significance of this study. This quantitative research was conducted using a descriptive approach and a cross-sectional design to examine patient self-care and its alignment with nutritional and fluid diet adherence among chronic kidney disease patients undergoing hemodialysis. The study was conducted at Bakti Timah Hospital and Depati Hamzah General Hospital in Pangkalpinang. This research primarily measured the degree of Self Care exhibited by Patients with Chronic Kidney Disease Undergoing Hemodialysis in adherence to a prescribed Nutritional and Fluid Diet. The findings unveiled a majority of patients (82.2%) adhering to dietary intake of essential nutrients, particularly staple foods. Conversely, the assessment of side dish consumption revealed a considerable proportion (62.7%) in the non-adherent category. Similarly, the description of mineral and water intake highlighted a majority (50.8%) falling into the non-compliant segment. Conversely, vegetable and fruit intake garnered adherence from a substantial number of patients (68.6%). Moreover, the assessment of self-care adherence in relation to vitamin consumption displayed a significant level of compliance (64.4%). In general, the self-care adherence to diet, nutrition, and fluids in hemodialysis (68.6%) was within the non-adherent category..

Keywords** : **Dietary compliance; Fluid; Hemodialysis; Nutrition; Self Care

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1. INTRODUCTION

Currently, Chronic Kidney Disease (CKD) or chronic kidney disease is a non-communicable condition whose prevalence is on the rise, raising concerns within the healthcare community due to its annual escalation. CKD signifies the advanced stage of kidney failure, impairing crucial functions such as metabolism and the regulation of bodily fluids and electrolytes – vital roles of the kidneys. This deterioration can result in compounded complications and eventual fatality. Within the healthcare and nursing domains, CKD has emerged as a prominent focal point, primarily due to the substantial and escalating annual caseload of CKD patients. A pivotal facet of CKD management involves hemodialysis, a procedure designed to supplant renal function (Padila, 2013). In this context, the role of nurses as caregivers and educators becomes imperative. Their expertise is indispensable in navigating the intricacies of caring for and educating individuals diagnosed with CKD who are undergoing hemodialysis therapy.

Hemodialysis (HD) serves as a therapeutic management approach for individuals grappling with chronic kidney disease. It stands as a surrogate for the natural execution of kidney function, aiding in the elimination of surplus or metabolic waste materials from the bloodstream. This intervention becomes imperative when the kidneys are rendered incapable of fulfilling their vital functions. Residues of metabolism, encompassing components such as water, potassium, uric acid, sodium, creatinine, hydrogen, urea, and analogous substances, traverse a semi-permeable membrane. This membrane's principal role is to segregate the constituents of blood from the dialysate fluid, achieved through processes encompassing diffusion, osmosis, and ultrafiltration. Hemodialysis is predominantly prescribed for patients entrenched in the advanced stages of chronic kidney disease, or those who have experienced a significant decline of approximately 85-90% in their kidney function (Haryono, 2013).

Chronic Kidney Disease (CKD), also known as chronic kidney disease, carries a significant mortality toll, claiming the lives of approximately 850,000 individuals annually. This somber statistic positions CKD as the 12th leading cause of death worldwide. This fatality rate demonstrates an escalating trajectory, with a notable annual increment. In the year 2017, reported cases stood at 2,241,998, which subsequently rose to 2,303,354 in 2018. The trend persisted in 2019, witnessing a further surge to 2,372,697 documented instances of CKD. Analyzing the data pertaining to incident rates reveals a consistent annual increase of 3%. This distressing pattern is not exclusive to the global arena, as Indonesia, too, contends with a mounting incidence of CKD cases each passing year (Registry IR, 2018).

Throughout 2018, the persistently escalating tally of chronic kidney disease (CKD) cases posed a pronounced concern for the Indonesian government. This apprehension was rooted in data sourced from the Indonesian Ministry of Health (2018). In Indonesia, the incidence rate of CKD stood at 2%, affecting an approximate total of 499,800 individuals. Notably, the highest regional prevalence within Indonesia was observed in Central Sulawesi, accounting for 0.5% of cases. The primary risk factors associated with the onset of CKD encompass hypertension, obesity, and diabetes mellitus. A more granular examination reveals a concerning trend in the Bangka Belitung province, where CKD incidence

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continues to surge annually. This discernment is substantiated by findings from the Basic Health Research (Riskesdas) conducted within the province in 2018. The prevalence of chronic kidney failure, based on the health profile of Bangka Belitung, was documented at 0.29%, corresponding to a total of 8,971 individuals among a population totaling 1,375,053 (Research Agency and Health Development Ministry of the Republic of Indonesia, 2018).

Hemodialysis therapy is undoubtedly advantageous for individuals afflicted with end-stage chronic kidney disease. However, the procedure does carry inherent risks and consequences for those who undergo it. Complications can arise, encompassing both physical and psychological issues for the patients. These complications can give rise to effects that influence both the physical and psychological well-being of the individual. Without proper management, the overall quality of life for those with chronic kidney disease may decline. This situation is closely linked to the patient's ability to practice self-care in order to uphold optimal quality of life. This capacity for self-care aligns with Orem's self-care theory, as noted by Rochim (2019).

The adherence to recommended nutritional and fluid intake among hemodialysis patients is a matter of significant concern for healthcare professionals, particularly nurses. This is due to the potential clinical repercussions of inappropriate or excessive dietary and fluid consumption, leading to conditions like ascites and edema. Moreover, insufficient muscle and fat mass can give rise to complications when nutrient intake is restricted. These issues are intricately linked to the management of nutrition, encompassing factors such as fluid volume, sodium content, subcutaneous fat, and muscle maintenance. The hemodialysis process often triggers alterations in blood pressure and a notable increase in body weight (exceeding 5%), accompanied by symptoms like edema and wet lung crackles discernible through auscultation. Swollen eyelids and breathlessness can also occur as a consequence of uremia, as described by S.C., Bare, B.G., Hinkle, and Cheever in 2010.

A majority of patients encounter challenges in effectively overseeing and executing their nutritional intake, primarily stemming from insufficient information and understanding regarding dietary management for individuals undergoing hemodialysis (Saglimbene et al., 221 C.E.).

Ensuring the proper management of dietary intake, encompassing both nutrients and fluids, holds immense significance for patients undergoing hemodialysis. The rationale behind this emphasis is rooted in the potential exacerbation of the physical well-being of individuals afflicted with chronic kidney disease through inappropriate and excessive nutrient and fluid consumption. It is widely acknowledged among patients that disregarding fluid restrictions can lead to dire consequences. However, despite this awareness, approximately half of hemodialysis patients exhibit non-compliance with the dietary and fluid restrictions prescribed by healthcare providers. This lack of adherence becomes evident when hemodialysis patients present with weakened physical states and respiratory distress, often arriving earlier than their designated treatment schedule. Neglecting to adhere to dietary and fluid restrictions can contribute to heightened mortality rates in hemodialysis patients, particularly when there is an excessive increase in

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body fluids, such as 5.7% above the dry weight during the hemodialysis procedure. The issue of hypervolemia precipitates elevated blood pressure levels and the onset of pulmonary edema. Consequently, this condition places additional strain on the heart and can lead to emergent hemodialysis situations (Relawati, 2016).

The preliminary research observed that patients typically underwent hemodialysis sessions 2-3 times per week, with each session lasting 4-5 hours. The patients being studied have been undergoing hemodialysis for an extended period. Interviews and observations involving 5 patients revealed that they adhere to their scheduled hemodialysis appointments. However, among these patients, 3 individuals reported arriving at the hemodialysis unit in a weakened state and occasionally experiencing shortness of breath upon arrival. Additionally, 5 patients demonstrated inadequate self-care practices pertaining to their nutritional and fluid intake. This scenario indicates a lack of compliance with the guidance provided by medical professionals, as these patients continue to consume excessive fluids and eat without proper consideration. Previous research has established a connection between self-care abilities and various aspects of quality of life, encompassing physical, psychological, and social dimensions (Heidarzadeh et al., 2010). Given these circumstances, the researchers have taken an interest in investigating the self-care behaviors of hemodialysis patients in Pangkalpinang, specifically regarding their nutritional and fluid intake routines.

2. METHOD

This study employs a quantitative research approach, utilizing a descriptive research design to elucidate self-care practices among hemodialysis patients in adherence to prescribed nutritional and fluid diets. The investigation is focused on individuals receiving treatment at both Bakti Timah Hospital and General Hospital in Depati Hamzah, Pangkalpinang. The chosen research design is cross-sectional in nature, allowing for a snapshot analysis of the self-care compliance with dietary guidelines, nutrition, and fluid intake within a specific population.

This research pertaining to the adherence of nutritional and fluid diets was conducted within the Hemodialysis Room of both Bakti Timah Hospital and Depati Hamzah General Hospital, both located in Pangkalpinang. The selection of these locations was based on the substantial volume of patient visits to the hemodialysis units, ensuring the availability of an adequate sample size and capacity of hemodialysis machines. The study was carried out in August 2022. The target population for this investigation encompassed all patients currently undergoing hemodialysis treatment at Depati Hamzah Pangkalpinang Public Hospital and Bakti Timah Hospital Pangkalpinang. The samples were selected using purposive sampling technique.

In this study, the selected samples consisted of hemodialysis patients who met the specified inclusion criteria. These criteria encompassed patients who demonstrated a willingness to participate as respondents, possessed effective communication skills, and underwent hemodialysis treatment on a regular basis twice a week. Conversely, individuals meeting the exclusion criteria included hemodialysis patients experiencing impaired consciousness

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and those incapable of completing the designated questionnaire.

The research instrument employed in this study was derived from the Asmaul Husna questionnaire, specifically adapted to assess dietary adherence among patients with chronic kidney disease undergoing hemodialysis. Data analysis for this study was conducted through univariate analysis, which involved examining individual variables independently. Within the scope of this adherence study, the variables under scrutiny pertained to patient self-care practices concerning diet, nutritional intake, and fluid consumption during the hemodialysis process. The results were subsequently compiled in the form of a frequency table to provide an overview of the findings.

3. RESULTS

Table 1. Respondents' Characteristics

Respondents' Characteristics	F	%
Age (years)		
<30	7	5.9%
31-40	29	24.5%
41-50	38	32.2%
51-60	37	31.3%
>60	7	5.9%
Total	118	100
Sex		
Male	61	51.7%
Female	57	48.3%
Total	118	100
Education Background		
SD	44	34.7%
SMP	23	19.5%
SMA	40	33.9%
PT	11	9.3%
Total	118	100
Employment		
Employed	32	27.2%
Unemployed	86	72.8%
Total	118	100
Length of HD (years)		
<1		
1-2	46	38.9%
2-3	33	27.9%
3-4	27	22.8%
>4	12	10.2%
Total	118	100
Hb Level		
7-8 gr/dl	38	32.3%
9-10 gr/dl	64	54.2%
>11 gr/dl	16	13.5 %
Total	118	100
Information		
Yes	118	100%
Never	0	0%
Total	118	100

Table 1 presents an overview of the participants included in this study, all of whom were undergoing hemodialysis at Depati Hamzah Hospital and Pangkalpinang RSBT. The survey involved a total of 118 respondents, with the majority being male, accounting for 61 individuals (51.7%). A significant portion of the respondents had attained an elementary school level of education, comprising 44 respondents (34.7%). In terms of occupation, a substantial proportion of respondents, 86 individuals (72.8%), reported being unemployed.

The age distribution of hemodialysis participants was predominantly concentrated within the 41-50 years and 51-60 years brackets, collectively representing 32 individuals (27.1%). As for the duration of the hemodialysis process, the most common timeframe was 1-2 years, accounting for 40% of the participants. In relation to hemoglobin (Hb) levels, the majority fell within the 9-10g/dl range. Notably, all respondents reported obtaining information about nutrition primarily from healthcare professionals, resulting in a 100% coverage in this regard.

Table 2. Dietary Compliance (Staple Food or Energy Source)

Assessment	F	%
Compliant	97	82.2
Noncompliant	21	17.8

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The majority of respondents are within the Compliant category regarding the consumption of staple foods or sources of energy, totaling 97 respondents (82.2%).

Table 3. Dietary Compliance (Side Dish Consumption)

Assessment	F	%
Compliant	44	37.3
Noncompliant	74	62.7

The majority of respondents are regarded Noncompliant in terms of side dish intake, totaling 74 respondents (62.7%)..

Table 4. Dietary Compliance (Mineral dan Air)

Assessment	F	%
Compliant	58	49.2
Noncompliant	60	50.8

Slightly half of the respondents, (60 respondents or 50.8%) show noncompliance in terms of mineral and water intake consumption.

Table 5. Dietary Compliance (Vegetable and Fruit Consumption)

Assessment	F	%
Compliant	81	68.8
Noncompliant	37	31.2

Most of the respondents are compliant in terms of fruit and vegetable consumption (81 respondents or 68,6%).

Table 6. Dietary Compliance (Vitamin Intake**)**

Assessment	F	%
Compliant	76	64.4
Noncompliant	42	35.6

76 respondents (64.4%) are regarded Compliant in taking vitamins..

Table 7. Overview of Item Dietary Compliance for Nutrient and Fruit Juice Intake

Assessment	F	%
Compliant	37	31.4
Noncompliant	81	68.6

The majority of patients undergoing hemodialysis are in the Noncompliant category in terms of nutritional and fluid diet adherence across all questionnaire items (81 respondents or 68.6%).

4. DISCUSSIONS

a) Age

The findings of the self-care study concerning adherence to nutritional and fluid guidelines revealed that the respondents were primarily within the age range of 41-50 years and 51-60 years. These outcomes align with prior research, which similarly indicates that a significant proportion of chronic kidney disease patients fall within the 41-60 years age bracket (Masulili, 2017). Age serves as a pertinent factor capable of portraying and reflecting conditions that influence an individual's health status. Particularly within the aging demographic, alterations in kidney and urinary system functionality tend to manifest due to the aging process (Smeltzer, S.C., Bare, B.G., Hinkle, J.L., Cheever, 2010). Upon reaching the age of 40 and beyond, a progressive decline in the glomerular filtration rate (GFR) occurs, continuing until the age of 70. This reduction in GFR typically amounts to less than 50% of the normal rate. Age-related changes also encompass diminished capabilities in kidney functions, such as filtration, reabsorption, and concentration. The overall physiological condition and metabolic regulatory systems undergo a declining function as the body ages, affecting various aspects, including kidney performance. The depiction of age within this study

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underscores the notion that advancing age corresponds to heightened complexity in health challenges, coupled with a decline in organ functions, particularly kidney filtration (Kastrouni et al., 2010).

As individuals age, it becomes increasingly important for them to enhance their decision-making capabilities, which encompass adhering to prescribed therapeutic regimens aimed at enhancing their well-being. Additional research underscores that when elderly individuals struggle to adjust to shifts in their bodily functions, feelings of frustration may arise, potentially leading to the development of negative attitudes toward their circumstances. Failure to promptly address this situation and provide adequate support could result in a lack of concern among the elderly for their own health status, leading to non-compliance with health-related recommendations (Manguma, 2015).

The study's findings revealed that the majority of respondents were elderly individuals aged 50 and above. The regulation of dietary nutrient and fluid intake is inherently intricate, contributing to the complexity of its management. Negotiating this complexity can pose challenges for certain patients, potentially leading to non-compliance with recommended guidelines. This non-compliance, in turn, can exert a subsequent impact on the nutritional well-being of hemodialysis patients and ultimately influence their overall quality of life. Patients who are capable of adhering to a diet tailored for chronic kidney conditions can effectively contribute to the maintenance of fluid-electrolyte equilibrium and prevent the excessive accumulation of waste products within the body. Consequently, this practice aids the hemodialysis process, ultimately leading to an enhancement in the patient's quality of life.

b) **Sex**

The outcomes of the self-care research regarding hemodialysis patients' adherence to diet, nutrition, and fluid protocols revealed a predominant representation of male respondents (51.7%). This aligns with prior investigations which also indicated that a larger portion of chronic kidney disease patients undergoing hemodialysis were male (Relawati, 2017). Notably, both male and female sexes carry an equal risk percentage for kidney disease. However, in practical terms, males are more prone to being affected by chronic kidney disease. This propensity can be attributed to several factors, including a higher prevalence of smoking and alcohol consumption among men. Prolonged and consistent engagement in these behaviors can contribute to the development of hypertension and diabetes mellitus due to an unhealthy lifestyle. Diabetes stands as one of the primary contributors to chronic kidney disease, closely followed by hypertension. Among the respondents in this study, a significant portion, as indicated by interview findings, reported a history of hypertension and diabetes mellitus. Furthermore, a notable number of cases of chronic kidney disease in men can be attributed to strenuous work environments, where extra energy is often sought through the consumption of energy drinks. This habit, unfortunately, can exacerbate and

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further deteriorate kidney function.

From an anatomical and physiological perspective, the higher prevalence of chronic kidney disease in men as compared to women can be attributed to distinct characteristics of the urinary tract. Anatomically, the urinary tract in men is longer than in women. This increased length results in a greater accumulation of substances within the urine among men. Over an extended period, these accumulated substances can contribute to the formation of urinary stones in both the urinary tract and kidneys. The presence of these stones can subsequently lead to blockages and infections within the urinary system.

c) Education Background

The study findings revealed that a majority of the respondents possessed an elementary school education. Despite education's pivotal role in knowledge acquisition, it is important to note that a well-informed individual is better equipped to make informed decisions and take appropriate actions in various aspects of life. Higher education levels facilitate access to information, particularly concerning therapeutic and rehabilitative programs aimed at enhancing patients' health conditions. Moreover, education has a notable impact on attitudes and behaviors. Individuals with higher levels of education tend to exhibit more favorable changes in their outlook and conduct. This effect is attributed to their enhanced ability to absorb and comprehend information, as well as their proficiency in applying such knowledge in their daily lives (Sari, 2012; Syamsiah, 2011).

d) Employment

This survey revealed that the majority of the respondents, accounting for 72.8%, were not employed. Respondents had cited several reasons related to their working conditions during their experience with CKD. There were various reasons for their cessation of work, primarily because the condition left them feeling exceedingly fatigued, consequently severely limiting their daily activities. Furthermore, a substantial number of patients had curtailed their movements due to apprehensions about exacerbating their condition. The presence of diverse complications resulting from hemodialysis treatment significantly hindered functionality and productivity, ultimately leading to job loss. Some individuals found themselves unemployed as a consequence of the effects of the hemodialysis process on their health. This situation further confined patients to their homes, inevitably reducing their engagement in daily and community-based social activities.

e) Length of HD

The findings of this research outline the attributes of participants depending on the duration of their hemodialysis sessions, with the majority having undergone treatment for 1-2 years (40%). The hemodialysis procedure demands a substantial duration to establish stability in patients' conditions and mitigate potential complications. In order to enhance their quality of life, patients are encouraged to adopt alterations in their behaviors,

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including moderation in dietary consumption and adherence to recommended fluid intake levels designed for individuals with chronic kidney disease. Patients afflicted by these circumstances might be prone to disregard regular hemodialysis routines (Maguma, 2015).

f) Nilai Hb

Patients who are undergoing hemodialysis experience a reduction in kidney function, which includes a decline in the production of the hormone erythropoietin. Consequently, this reduction leads to a decrease in the quantity of blood cells, ultimately leading to the development of anemia.

g) Information Related to Diet

The study's outcomes reveal that all participants were provided with guidance on dietary restrictions concerning food and fluid intake within the hemodialysis unit, as indicated by the questionnaire findings. This information was disseminated by healthcare practitioners, including physicians, nurses, and nutritionists. The findings indicate that hemodialysis patients possessed a commendable understanding of the prescribed diet for hemodialysis, which they primarily acquired from healthcare professionals. Additionally, beyond the guidance received from healthcare personnel, patients also accessed relevant information regarding nutritional regimens and fluid consumption for hemodialysis through electronic media.

Nonetheless, in practice, despite being provided with guidance concerning dietary habits, nutrition, and fluid intake, there remains uncertainty regarding the extent to which respondents will adhere to the information conveyed by healthcare professionals. This variance in compliance is attributed to the inherent individuality of behavioral modifications. Effecting behavioral changes necessitates an intrinsic awareness and a robust personal determination on the part of the patient.

h) **Dietary Compliance Related to Consumption of Staple Foods or Energy Sources**

The study findings indicated that a majority of the participants, comprising 82.2%, fell into the category of compliance when it came to the consumption of staple foods or sources of energy for individuals undergoing hemodialysis. The assessment encompassed various inquiries, including the intake of rice, potatoes, and bread within a single day, along with their respective portions. Furthermore, the evaluation encompassed the consumption of granulated sugar, as well as the level of adherence and self-management in meeting energy requirements. The majority of patients demonstrated adherence, as reflected by their responses to these inquiries.

Individuals undergoing hemodialysis treatment necessitate appropriate food intake that is balanced, ensuring neither excessive nor insufficient quantities of both nutrients and nutrition. This adequacy is crucial to maintaining a favorable nutritional state. Inadequate nutritional status can lead to increased mortality among patients with chronic kidney disease who are undergoing hemodialysis treatment. To avert the catabolism of bodily tissues, it

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becomes imperative to ensure a satisfactory intake of energy.

i) **Dietary Compliance Related to Side Dish Consumption**

In the category of non-adherent dietary compliance, there were 74 respondents (62.7%) pertaining to the consumption of side dishes. The evaluation encompassed questions addressing the portion sizes of tempeh, meat, chicken, eggs, and the utilization of oil during side dish preparation. Understanding the dietary tendencies of hemodialysis patients in relation to their consumption of side dishes serves as a pivotal gauge for the effectiveness of dietary constraints. Recognizing instances of excessive side dish intake beyond prescribed limits among hemodialysis patients equips nurses to offer guidance and gain insights into the patients' conditions. Nurses play a crucial role in facilitating patients' adoption of appropriate behavioral changes and interventions, thereby aiding adherence to the recommended dietary regimen (Biruete et al., 2017a).

Insufficient comprehension of dietary requirements among individuals with kidney disease, coupled with inadequate education and information resources, as well as restricted time for patient education on dietary limitations, can result in missteps during the management of patient self-care and dietary adherence. Such errors have the potential to exacerbate the patient's health status, further compromising their well-being (Devraj et al., 2015).

j) **Hemodialysis Patient Self-Care in Dietary Compliance for Fluid Intake and Mineral Consumption**

The findings derived from the section of the mineral and water intake questionnaire highlight that 50.8% of the respondents fall into the non-compliant category concerning Mineral and Water intake. The questions in this section pertain to aspects of fluid consumption, encompassing the methods of ingesting canned foods, consuming biscuits, managing fluid intake based on urinary output, and implementing self-regulation of fluids among patients. The study's outcomes reveal that patients do not restrict their fluid intake in proportion to the volume of urine produced. Furthermore, a portion of respondents surpass the doctor-prescribed dosage for fluid consumption. Some participants also noted that despite their fluid intake being adequate, they experience sensations of thirst and subsequently consume fluids until their thirst subsides.

The adherence to fluid intake control is discernible through a rise in interdialytic body weight, as indicated by Wibowo in 2020. The assessment of compliance with fluid intake restriction was quantified by calculating the average increase in body weight between dialysis sessions, referred to as interdialytic weight gain (IDWG). Patients who effectively manage their IDWG can enhance the quality of life for individuals with end-stage renal failure undergoing hemodialysis. Alterations in lifestyle and constraints on dietary and fluid intake, commonly experienced by individuals with chronic kidney disease, can sometimes lead to discouragement

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among patients. This, in turn, has the potential to impact patient adherence to fluid intake limitations, as observed by (Anita & Novitasari, 2017).

k) **Dietary Compliance Related to Vegetable and Fruit Consumption**

A significant portion of the research findings fell within the category of adherence concerning Vegetable and Fruit intake, with 81 respondents (68.6%) displaying compliance. The questionnaire encompassed several items addressing the constraint on vegetable and fruit consumption. Education emerges as a crucial factor in furnishing patients with information, thus fostering comprehension and ultimately bolstering patient compliance. The knowledge imparted by healthcare practitioners, coupled with the patient's intrinsic motivation and awareness, contributes to an elevated level of adherence to therapy. Effective and suitable communication undertaken by healthcare providers serves to enhance awareness about permissible fruits and vegetables, along with their limitations. This communication empowers patients to regulate their dietary patterns. Patients gain an understanding that consuming fruits and vegetables must adhere to established rules and recommendations, as disregarding these guidelines could exacerbate their condition, as observed by Biruete et al., (2017b).

The results reveal that respondents possessed a comprehension of the permissible fruits and vegetables for consumption, along with the associated limitations. Patients exhibited awareness regarding the rationale behind restricting fruit and vegetable intake. This understanding extended to recognizing specific fruits and vegetables that could be consumed in controlled quantities due to their potential to exacerbate the disease when excessively ingested. Respondents demonstrated an ability to identify which fruits and vegetables were sanctioned for consumption and which were to be avoided. Patients acknowledged that certain fruits, such as papaya, were allowable within predetermined quantities. Furthermore, patients were well-informed about the restricted consumption of vegetables, particularly spinach. However, a subset of respondents admitted to consuming prohibited fruits and vegetables. Additionally, instances were noted where patients consumed forbidden fruits and vegetables shortly before the dialysis procedure, despite being aware of the restrictions.

l) **Dietary Compliance Related to Vitamin Consumption**

A considerable majority of patients, totaling 76 respondents (64.4%), were categorized as adhering obediently to the prescribed vitamin regimen as advised by their physicians. For individuals undergoing hemodialysis, vitamin supplements become a requisite. Various supplements can be administered to patients, following recommendations from their attending doctors, in order to fulfill the body's vitamin requirements.

Moreover, meticulous monitoring of iron levels is imperative. Iron supplementation is essential in averting anemia arising from reduced erythropoietin hormone production.

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In cases of iron deficiency, intravenous iron therapy can be administered during dialysis sessions to address the shortfall.

m) **Self-Care of Hemodialysis Patients in Dietary Compliance for Nutrition and Fluid Intake Among Patients Undergoing Hemodialysis**

As per Dorothea Orem's perspective, the self-care capability of hemodialysis patients represents an activity that empowers individuals to enhance their skills, enabling them to effectively uphold optimal bodily functions, as highlighted by Muhlisin and Irdawati (n.d.). The utilization of the Orem theory approach within nursing care underscores the inherent potential within each person to engage in self-care. Within this framework, patients foster self-reliance by harnessing their own abilities to manage their care. The objective is to empower patients to actively participate in enhancing their health status, thereby striving for an improved quality of life among hemodialysis patients. Failure to engage in self-care can lead to a deterioration of physical well-being, potentially exacerbating symptom severity. Ultimately, this could diminish the overall quality of life for these patients, as observed by Britz & Dunn, (2010).

Enhancing self-care autonomy is a pivotal objective for patients, aiming to bolster their self-reliance and, consequently, elevate the overall quality of life for those undergoing hemodialysis. This aligns with prior research that underscores the detrimental impact of neglecting self-care, particularly in the context of dietary management, on the well-being of hemodialysis patients, as noted by Hermawati and Silvitasari in 2020. In accordance with Orem's framework, patients receiving hemodialysis treatment inherently possess the capacity for self-care. It is incumbent upon nurses to adeptly unearth and channel these inherent abilities within patients. The primary objective is to facilitate patients in performing daily self-care, encompassing the apt adaptation of nutritional and fluid intake based on individual circumstances. Nurses are entrusted with the responsibility to effectively elucidate and educate patients about the appropriate nutritional and fluid intake strategies pertinent to hemodialysis therapy.

5. CONCLUSIONS

A comprehensive study encompassing 118 hemodialysis patients was conducted. The participants comprised 61 men (51.7%). Within the group, 44 respondents (34.7%) had received basic education, and a significant proportion were unemployed (72.8%). Predominantly, the age distribution was highest among the 41-50 years and 51-60 years age groups, totaling 32 individuals (27.1%).

Regarding the duration of the hemodialysis process, the majority fell within the 1-2 year range (40%). Hemoglobin (Hb) values predominantly ranged between 9-10 g/dl. All respondents (100%) acquired nutritional information from healthcare sources. Most participants demonstrated adherence concerning staple food consumption, with 97 respondents (82.2%) adhering to the prescribed diet for hemodialysis patients. However, a substantial number of respondents, 74 individuals (62.7%), exhibited non-

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adherence regarding side dish consumption – a crucial component of the hemodialysis diet. Similarly, 60 respondents (50.8%) demonstrated non-compliance in mineral and water intake. On a positive note, a significant majority, 81 respondents (68.6%), were compliant in their consumption of vegetables and fruits. Furthermore, a majority of 76 respondents (64.4%) adhered to the recommended vitamin consumption. In summary, collective overview of self-care adherence to diet, nutrition, and fluids in hemodialysis patients underscores that a significant portion, 81 respondents (68.6%), exhibited non-adherence across all questionnaire items.

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