


The effect of play media health education on fluid restriction adherence in chronic renal failure patients in the hemodialysis room of RSU Haji Medan in 2023

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Article Info	ABSTRACT
<p>Keywords: chronic renal failure, fluid restriction, Health Education Play Media</p>	<p>Chronic kidney failure is a disease in which the body fails to maintain metabolism and fluid and electrolyte balance. Based on data from the Indonesia Renal Registry (IRR), as many as 98% of patients with Chronic Kidney Disease (CKD) undergo Hemodialysis therapy and 2% undergo peritoneal dialysis (PD) therapy. This study aims to analyze the effect of health education with Play Media on fluid restriction compliance in chronic kidney failure patients in the Hemodialysis Room of RSU Haji Medan in 2023. This type of research is quantitative research using Experimental Research with quasi-experiments, Design One group pretest-posttest only design. The population in the study of all CKD patients with a total of 42 people, the sampling technique is non-probability sampling in the form of Purposive sampling, which meets the inclusion criteria of 21 people. Data collection method using questionnaires. The statistical test used is the Wilcoxon Sign Rank Test with a value of α 0.05. The results of this study are known that before health education was given, the majority of whom were non-compliant as many as 19 people (90.%) and after being obedient to 17 people (81.0%), the results of the Wilcoxon Sign Rank Test Analysis obtained a p-value of 0.000 (< 0.05) meaning that H_0 was rejected H_a was accepted, meaning that there is an influence of health education on fluid restriction compliance in chronic kidney failure patients in the Hemodialysis Room of RSU Haji Medan in 2023, with a value of Z (3.844). The conclusion of the study shows that there is an influence of rotary media health education on fluid restriction compliance in chronic kidney failure patients in the Hemodialysis Room of RSU Haji Medan In 2023, it is expected that Haemodialysis room officers will provide counseling to patients in fluid restriction.</p>
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INTRODUCTION

Chronic renal failure or end-stage disease (ESRD) is a disease with impaired progressive and irreversible renal function in which the body fails to maintain metabolism and fluid and electrolyte balance, causing retention of urea and other nitrogen waste in the blood. (Wahyuni, 2020).

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Chronic renal failure is also a loss of the kidney's ability to maintain the volume and composition of body fluids under normal circumstances with oliguric (decreased voiding) <400ml/24h, resulting in an increase in ureum. has the characteristics of being sedentary, incurable, and requires treatment in the form of kidney transplantation, peritoneal dialysis, hemodialysis, and outpatient for a long time (Black & Hawk, 2014 in Fajri, Sulastri, & Kristini, 2020).

According to the World Health Organization (WHO) in 2018 explained that chronic kidney failure is a health problem, there are 1/10 of the world's population identified with chronic kidney disease and an estimated 5 to 10 million patient deaths each year, and an estimated 1.7 million deaths each year due to acute kidney damage (Zulfan et al., 2021). According to national data, 713,783 people and 2,850 who underwent hemodialysis treatment. The number of chronic kidney failure in West Java reached 131,846 people and became the highest province in Indonesia, Central Java ranked second with 113,045 people, while the number of chronic kidney failure patients in North Sumatra was 45,792 people. In this description, the number of men is 355,726 people, while in women it is 358,057 (Ministry of Health, 2019).

Hemodialysis is a therapy that supports the survival of chronic kidney failure. This therapy can prolong the life of the patient but cannot restore kidney function completely. Based on data from the Indonesia Renal Registry (IRR), as many as 98% of patients with Chronic Kidney Disease (CKD) undergo Hemodialysis therapy and 2% undergo peritoneal dialysis (PD) therapy. The biggest causes of Chronic Kidney Disease (CKD) are Diabetic Nephropathy (52%) and Hypertension (24%) (RI, n.d.). (Fajri, Sulastri, & Kristini, 2020).

Based on Riskendas in 2018, the proportion of the population undergoing hemodialysis in Indonesia has increased from 78,281 patients (2%) to 108,723 patients (3.8%). Based on data from the 11th Report Of Indonesian Renal Registry (IRR) 2018 from 11,531 renal units that reported, there were 66,433 new patients and 132,142 active patients undergoing hemodialysis in 2018, at least 6898 patients (78%) died and 1941 patients (22%) dropped out who might have difficulty getting access to the hemodialysis unit. Sulistuyaningih & Doddy Yumam Prasetyo (Riskendas, 2018). In addition to HD measures, adherence to a low-salt diet and fluid restriction in patients with CHRONIC RENAL FAILURE are also indispensable to maintain patient survival as part of their treatment. According to Wulan & Emaliyawati (2018), in a study related to Education on adherence to fluid restrictions and a low-salt (sodium) diet in CHRONIC RENAL FAILURE patients undergoing HD showed 66.7% of patients did not comply with fluid restrictions and low-salt (sodium) diets resulting in increased blood pressure, increased Interdylic Weight Gain, anasarca edema and shortness of breath.

Fluid restriction makes this decrease in oral intake will cause dry mouth and tongue rarely watered and this condition that triggers complaints of thirst, in the physiological process of the body 30-60 minutes after drinking the feeling of thirst will reappear. (Guyton, 2016. in Fajri, Sulastri, & Kristini, 2020). Fluid restriction in chronic renal failure patients undergoing hemodialysis is something that needs attention. One way to reduce

thirst and minimize weight gain is with Cube's ICU therapy to help reduce thirst and refresh the throat. (Arfany, Armiyanti & Kusuma, 2014. in Fajri, Sulastri, & Kristini, 2020).

Patients who have difficulty in doing incoming fluid diit, because they do not pay attention to the importance of limiting fluid intake that enters the body. For patients with chronic renal failure, fluid intake that enters the body must be regulated so that the weight gained is no more than 2 kg between dialysis times (Nur et al., 2020).

Adherence to therapy in patients with hemodialysis is important to note because if the patient does not comply there will be a buildup of harmful substances from the body resulting from metabolism in the blood. Furthermore, the patient feels pain throughout the body and if left unchecked it can cause death. Basically, patients with kidney failure, both acute and chronic, are very dependent on hemodialysis therapy whose function replaces kidney function. (Sunrni, 2009 in Ningrum, et al, 2020).

The most adherence to the control group before health education was 11 people (55%). Compliance in the experimental group was 12 people (60%). Compliance with Fluid Restriction in the Control Group without Health Intervention / Education, in the control group showed respondents with a compliance rate of 75%, this is in line with Hartati's research (2016) which states that the control group complies with fluid restriction. The most adherence to the experimental group after health education was 18 people (90%). Health education is defined as a process consisting of assessment, intervention and evaluation (Edelman & Mandle, 2010). in (Widhawati, Riswahyuni., & Fitriani, 2021).

In this study, researchers provided health education related to fluid restriction using rotary wheel media, inside the wheel there will be normal values of fluid that can be consumed by hemodialysis patients. The way it is applied is to spin the wheel and where it stops, the respondent will say what is written in the media and remember it, after which the researcher will re-evaluate whether the patient can remember it.

Based on Simanjuntak's research, Gamalielya Gera & Lita Sri Andayani, (2022) have concluded that rotary wheel media has proven effective in increasing knowledge. The results can be known that the average value of knowledge before the rotary wheel game was 10.73 and after the rotation wheel game the average result of respondents' knowledge increased to 18.87 with a probability value (p) = 0.001 and a Z value of -3.416. While it is known that the average value of respondents' attitude before the rotary wheel game was carried out was 11.27 and after the rotary wheel game increased to 19.27 with a probability value (p) = 0.001 and a Z value of -3.424.

Based on Medical Record data in 2021, the number of patients on Hemodialysis was 814 people, in 2022 there were 826 people, and in January-March 2023 there were 42 people, an initial survey was conducted on January 27, 2023 of 5 patients. Researchers asked about what causes to undergo Hemodialysis therapy, the schedule of therapy every week, how long it has been undergoing Hemodialysis therapy, from the interview results 5 patients really did not understand about fluid restriction, and there was 1 patient he said when drinking a lot his left hand swelled and sometimes tightness in the chest, and for other patients some already understand about fluid restriction because they have undergone therapy for an average of 1-5 years. The effects of hemodialysis caused in the

form of dizziness, weakness, daze, and one of the patients said that in the Hemodialysis Room of RSU Haji Medan for information related to fluid restrictions was still small because nurses were busy with their work. This problem is what researchers raise as a problem in this study.

METHODS

This type of research is quantitative research using Experimental Research is a study by conducting experimental activities (experiments), which aims to determine the symptoms or influences that arise, as a result of certain treatments or experiments (Notoatmodjo, 2020). This research design uses a quasi-experimental research design. The type used in this study was one group pretest-posttest only design. In this design there is also no comparison group (control), but at least the first observation (pretest) has been made which allows testing the changes that occur after the experiment (program).

This study was conducted in the Hemodialysis Room of RSU Haji Medan, because many patients who experienced excess population fluid and sempel met supporting references, locations that were easy to reach and to the knowledge of researchers had never conducted research on the effect of health education on fluid restriction compliance. This research starts from submitting titles, initial surveys, preparing research theses and research results carried out from January to August 2023 and has been carried out from 8 – 19 May 2023.

The population in this study is all patients who are undergoing hemodialysis in the Hemodialysis room of RSU Haji Medan in January 2023 as many as 42 people. The samples in this study were patients who were undergoing hemodialysis in the Hemodialysis room of RSU Haji Medan as many as 21 people.

The sampling technique in this study is using purposive sampling, which is a sampling technique with certain considerations made by the researcher himself. The sampling technique in this study uses a non-probability sampling technique in the form of purposive sampling, which is sampling based on a certain consideration made by the researcher himself, based on the characteristics or characteristics of the population that have been known before (Notoatmodjo, 2020). The criteria in this study are as follows:

Inclusion criteria are criteria or traits that need to be met by each member of the population that can be sampled.

- a. Undergo HD regularly twice a week.
- b. Undergoing HD has been 1 year.

Exclusion criteria are characteristics of members of the population that cannot be sampled.

- a. Experiencing complications.
- b. Experiencing a decrease in consciousness and condition.
- c. Experiencing hearing and visual impairment.
- d. Died .

The sample in this study is a portion taken from the entire object studied and is considered representative of the entire population (Notoatmodjo, 2020). The samples in this study were elderly who met the inclusion criteria in the Hemodialysis Room of RSU Haji Medan as many as 21 people. In this study there are two research variables, namely independent and dependent variables. Where the independent variable of this study is the dependent Health Education Effect of this study is Hemodialysis Patient Fluid Restriction Adherence.

The procedure carried out in collecting data is to apply for permission to the Nursing Study Program of Hajj University of North Sumatra Medan. Then apply for permission to the Training of RSU Haji Medan, then research data collection is carried out. Researchers explain the purpose, objectives, procedures, benefits as well as agree on the schedule for conducting research. Furthermore, researchers begin with the determination of the researchers' samples in accordance with the number and method of sampling that has been determined. Researchers carried out questionnaire delivery techniques that had been filled out by respondents. All data to be obtained through the questionnaire is collected and then examined.

Before the study, researchers visited the Hemodialysis Room at RSU Haji Medan then provided information to clients about the purpose, purpose and benefits of the research the day before the study began, filling in demographic data if the elderly had inclusion criteria. Researchers ask respondents voluntarily for consent to become research subjects by signing an informant consent sheet and will be included in the implementation of the study. Conduct a pre-test by measuring the compliance of fluid restrictions on clients using questionnaires, namely with "yes & no" answers. Sharing SAP then explained the importance of fluid restriction for Chronic Renal Failure patients, especially those who are undergoing Hemodialysis following a series of studies.

The data collection tool or instrument used in this study was a questionnaire in the form of questions related to data on the characteristics of HD patients, and compliance with fluid restriction of HD patients. Researchers used a questionnaire made by Tatu Hirmawaty (2014). The questionnaire is measured on a guttman scale that will get a "yes-no" answer. The assessment of this questionnaire is determined by the researcher with two choice scores, namely yes or no answers. Questions with yes have a weight of 1 and questions with answers do not have a weight of 0. Total scores on the fluid restriction compliance questionnaire 1-17 where compliant (8-17) and non-compliant (1-7). The lower the number of scores, the lower the compliance rate.

Univariate analysis was carried out to obtain an overview of each variable, looking at the frequency with which each variable can be known in this study, namely: initials of respondents' names, age, gender, address. Analyzing the compliance of fluid restrictions before and after being carried out in the Hemodialysis Room of RSU Haji Medan. The data processing technique in this study used the Wilcoxon Test. The Wilcoxon test was used to test significant levels of differences in respondents' fluid restriction compliance before and after health education. Researchers are assisted by computerized data processing, namely by using computer programs. In order for the calculations to be more accurate, researchers

also use computers. Output data is the result of data processing presented in the form of numbers. In bivariate analysis conducted to determine the effect of the independent variable (Health Education) with the dependent variable (Compliance with Fluid Restriction) indicated by a value of $p < 0.05$.

RESULTS AND DISCUSSION

Demographic Data

The results of research on demographic data (Age, Gender, Education and Occupation) are in table 1.

Table 1. Characteristics of Respondents Based on Demographic Data at RSU Haji Medan Hemodialysis Room in 2023.

Demographic Data	Frequency	Percentage %
Age		
28-40 Years	2	9,5%
41-55 Years	8	38,1%
56-83 Years	11	52,4%
Total	21	100%
Gender		
Man	9	42,9%
Woman	12	57,1%
Total	21	100%
Education		
SD	3	14,3%
SMP	9	42,9%
SMA	8	38,1%
S-1	1	4,8%
Total	21	100%
Work		
Housewives	9	42,9%
Wiraswasta	7	33,3%
Pension	1	4,8%
Pegawai Honorer	2	9,5%
Civil servants	2	9,5%
Total	21	100%

Based on table 1 of the research results, the majority of respondents aged 56-83 years were 11 people (52.4%), female gender was 12 people (57.1%), junior high school education was 9 people (42.9%), housewives were 9 people (42.9%).

Adherence to fluid restriction in patients with chronic Ginjak failure before health education is given rotary media in the hemodialysis room of RSU Haji Medan in 2023

From the results of research on Compliance with fluid restrictions in patients with chronic renal failure before health education is carried out in the hemodialysis room of RSU Haji Medan in 2023, it can be presented as follows:

Table 2. Frequency Distribution of Fluid Restriction Adherence to Chronic Renal Failure Patients Before Health Education Is Given Play Media in the Hemodialysis Room of RSU Haji Medan in 2023

Compliance Categories	Frequency	Percentage %
Obedient	2	9,5%
Disobedient	19	90,5%
Total	21	100%

Based on table 2, it can be explained that the level of influence before being given health education Media Play compliance with fluid restrictions, the majority of non-compliance is as many as 19 people (90.5%).

Adherence to fluid restriction in patients with chronic Ginjak failure after being given health education Play media in the hemodialysis room of RSU Haji Medan in 2023

From the results of research on Compliance with fluid restriction in patients with chronic renal failure after health education, Play Media in the hemodialysis room of RSU Haji Medan in 2023 can be presented as follows:

Table 3. Frequency Distribution of Fluid Restriction Adherence to Chronic Ginjak Failure Patients After Being Given Rotary Media Health Education in the Hemodialysis Room of RSU Haji Medan in 2023

Compliance Categories	Frequency	Percentage %
Obedient	17	81%
Disobedient	4	19,0%
Total	21	100%

Based on table 3, it can be explained that the level of influence on respondents after being given health education Media Play compliance with fluid restrictions is the majority, namely compliance with 17 people (81%).

The Effect of Play Media Health Education on Fluid Restriction Adherence in Chronic Renal Failure Patients in the Hemodialysis Room of RSU Haji Medan in 2023.

From the results of research on the Effect of Play Media health education on fluid restriction compliance in chronic kidney failure patients in the hemodialysis room of RSU Haji Medan in 2023, it can be presented as follows:

Table 4. The results of the analysis of the effect of rotary media health education on fluid restriction compliance in chronic renal failure patients in the hemodialysis room of RSU Haji Medan in 2023.

Result	Mean	SD	Mean Difference	p-value	Z- Score
Before	5,90	1,179	2,013	0,000	3,844

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Result	Mean	SD	Mean Difference	p-value	Z- Score
After	12,76	3,192			

Based on table 4.4, it can be explained that before and after the Rotary Media health education was given to the adherence of fluid restrictions in chronic renal failure patients had disputes (2.013), and the results of the Wilcoxon Signed rank Test statistical test obtained p-values $(0.000) \leq (0.05)$. This means that H_0 is rejected and H_a is accepted, so there is an influence of health education on fluid restriction compliance in chronic kidney failure patients in the Hemodialysis Room of RSU Haji Medan in 2023 with the result of a value of $Z = 3.844\%$ means that there is an influence of health education on fluid restriction compliance in chronic kidney failure patients by 3.844%

Discussion

Identification Before Health Education Is Given Play Media for Adherence to Fluid Intake Restrictions in Chronic Renal Failure Patients in the Hemodialysis Room of RSU Haji Medan in 2023

The results of the study are known that from respondents in the Hemodialysis Room of RSU Haji Medan in 2023, it can be known that the level of respondents before non-compliant health education is carried out has the highest number. Where the function of knowledge is the encouragement to be curious, to seek reasoning and organize its experience so that consistency is achieved. The intervention carried out is Health Education using Play Media, respondents can obtain knowledge of fluid restrictions with a short reasoning time, because in the Play Media displays various kinds of images with animated images obtained from Google. Because of the large number of respondents who did not comply because respondents previously did not get health education, fluid restriction with interesting media and they were bored with the media, and lack of guidance in fluid restriction, other factors that cause respondents to not comply are because the age is no longer young where to absorb information has decreased, the level of education also affects the understanding of health education, fluid restriction delivered. Maslakha (2015) in I luh & Fransiska (2018) also showed the results of research on patient adherence to their liquid diet influenced by the level of knowledge of respondents who were mostly highly educated.

Based on the description above, researchers argue that Health Education on fluid restriction compliance needs to be done to increase the knowledge of chronic kidney failure patients in fluid restriction. Breerendrskumar (2017) in Maslakha (2015) in I luh & Fransiska (2018) adherence to a liquid diet is absolutely necessary in patients with Chronic Ginjak Failure to reduce morbidity associated with renal dysfunction.

Identification After Health Education Given, Rotary Media on Compliance with Fluid Intake Restrictions in Chronic Renal Failure Patients in the Hemodialysis Room of RSU Haji Medan in 2023

From the results of a study of respondents in the Hemodialysis Room of RSU Haji Medan in 2023, it can be seen that the level of fluid restriction of respondents after being given health education with obedient Play Media has the highest number. There are

changes in managing his health condition independently starting from lifestyle changes such as a healthy diet. Maintain weight, consume enough water, always pay attention to the amount and color of urine, avoid consumption of drugs that can damage the kidneys, can reduce cigarette / alcohol intake, comply with treatment, reduce eating canned food, regulate diet intake and do not consume large portions of fruit.

In the study the effect of health education was carried out for 2 weeks, in the first week came on Monday and Wednesday and in the second week came on Tuesday and Thursday. This study determined the calculation of the pretest given a questionnaire limiting fluid intake on the first day of the study, then conducting SAP (Extension Event Unit) time was carried out for 20 minutes. The effect of providing Play-based health education is because the module is a process that the system using learning media will greatly help the process of receiving the information. Then the posttest is measured after exposure to fluid restrictions then gives questionnaires on the second or previous day, as well as on the third and fourth days.

This is in line with Gamalielya's (2022) research entitled The Effectiveness of Rotary Wheel Games on Student Knowledge and Attitudes Regarding COVID-19 at SD Cahaya Pengharapan Abadi Deli Serdang. After being given the intervention of Play Media, patients are able to regulate their health conditions independently so that it has an impact on increasing fluid restriction or the ability to control fluid intake, seen from the patient answering often weighing the body, controlling blood pressure, adhering to treatment, regulating dietary intake where patients avoid foods containing salt and MSG (flavor enhancers) such as ajinomoto, sasa, and others. Can avoid foods that contain potassium such as: sweet potatoes, spinach, and bananas. Patients also limit strenuous activity and rest enough time so as not to feel tired or weak.

Unique media will increase the interest of respondents to be able to receive the information provided, besides that it turns out that this rotary media is not only effective for school-age children, but for the elderly is also very influential. Where it can be seen that after being given health education on fluid restrictions using rotary media, the level of compliance of respondents increased before being given health education on fluid restrictions, the majority of whom were not compliant, after being given health education on fluid restrictions the majority were obedient. Based on the explanation above, researchers argue that the provision of information related to fluid restriction has an impact on increasing compliance with patient fluid restrictions every day.

The Effect of Health Education on Compliance with Fluid Intake Restrictions in Chronic Renal Failure Patients in the Hemodialysis Room of RSU Haji Medan in 2023

Based on the results of the Wilcoxon Sign Rank Test, researchers proved that there was a change in fluid restriction compliance with the results showing that health education before being given with the highest number of non-compliance. After being given health education, the highest number is compliant with, with the value (p) obtained which is 0.000 and the level of meaning $\alpha = 0.05$. So it can be concluded that there is an influence of health education on fluid restriction compliance in chronic kidney failure patients in the Hemodialysis Room of RSU Haji Medan in 2023.

This result is in line with Orem's Theory in Alfrida (2017) says that chronic kidney failure patients undergoing hemodialysis therapy will be able to overcome various complications and maintain their health after knowing a lot about and the symptoms they experience. This will be possible through one of the non-pharmacological interventions, namely the influence of health education on lifestyle management. Providing sufficient information can help patients stay healthy and move optimally during hemodialysis intervals.

(Kusuma, Pertiwi, Annissa, 2019). It shows that the target group exposed to health education has significantly increased knowledge and as many as 97% of respondents stated exposure to health promotion. (Herwiyat. A. A. 2020) Analysis in this study using the Wilcoxon test, obtained QOL results before and after health education about fluid restriction known Z value (-3.412) and p value (0.001) $<$ sig (0.05). From these results, it can be concluded that there are differences in QOL before and after health education about fluid restriction. According to Marilyn, (1998) in Friedman (2012), there is a relationship between dietary adherence to the quality of life of CKD patients undergoing HD therapy, because if the recommended diet is done well, it can affect the physical dimension, psychological dimension, environmental dimension and social dimension. By conducting health education on fluid restriction compliance in chronic kidney failure patients in the Hemodialysis Room of RSU Haji Medan in 2023 for 2 weeks, research can increase respondents' knowledge in limiting fluids to improve their quality of life.

CONCLUSION

Compliance with fluid restrictions in patients with chronic renal failure before health education in the Hemodialysis Room at RSU Haji Medan in 2023 amounted to 2 people. Compliance with fluid restrictions in patients with chronic renal failure after health education in the Hemodialysis Room at RSU Haji Medan in 2023 totaled 17 people. There is an influence of health education on fluid restriction compliance in chronic renal failure patients in the Hemodialysis room of RSU Haji Medan in 2023 with a p -value (0.000) $<$ α (0.05).

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