Jurnal Kesehatan dr. Soebandi
ISSN : 2302-7932 (Print)
ISSN : 2527-7529 (OnLine)

Sharing Based Peer Group Support on Dietary Compliance of CKD Patients Undergoing Hemodialysis

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Submited : 28 July 2023 ; Accepted : 28 July 2024

Doi: https://doi.org/10.36858/jkds.v12i2.554

ABSTRACT

Patients consume inadequate food intake from the diet recommended for Chronic Kidney Disease (CKD) patients on the one hand and excess intake of phosphorus, sodium, calcium, and potassium on the other. The purpose of this research is to know the influence sharing-based peer group support on dietary compliance of CKD patients undergoing hemodialysis in the Hemodialysis Room. The research design was quasy-experimental with approach two group pre-post test design. Technique sampling which is used was proportionate stratified random sampling with a total sample of 54 people with CKD undergoing hemodialysis. Measuring tool used was a CKD patient dietary compliance questionnaire. This research was conducted in January 2023. This study showed the score of dietary compliance in the control group pre test shows that 63% of respondents have high compliance and post test the results obtained 81% of respondents have high compliance. In the experiment groups pre test found 55.6% respondents had moderate compliance, and post test found 63% respondents had high compliance. The results of the independent t tes found that there was no difference in the score of dietary compliance after the intervention was given between two group (p value 0.716 > α = 0,05). There is no influence sharing-based peer group support on dietary compliance of CKD patients undergoing hemodialysis in the Hemodialysis Room. Thus, it is suggested that the hospital devise a plan of health education activities at least once a week, so that it can improve their health status and how to prevent severity during treatment.

Keyword: Diet; Health education; CKD patients; Peer support group; Compliance

ABSTRAK

Konsumsi asupan makanan pasien yang tidak mencukupi pola makan yang dianjurkan untuk pasien Penyakit Ginjal Kronis (PGK) di satu sisi dan kelebihan asupan fosfor, natrium, kalsium, dan kalium di sisi lain. Tujuan penelitian ini adalah untuk mengetahui pengaruh dukungan peer group berbasis sharing terhadap kepatuhan diet pasien PGK yang menjalani hemodialisis di Ruang Hemodialisis. Desain penelitian adalah eksperimen semu dengan pendekatan two group pre-post test design. Teknik pengambilan sampel yang digunakan adalah Proportionate Stratified Random Sampling dengan jumlah sampel sebanyak 54 orang penderita PGK yang menjalani hemodialisis. Alat ukur yang digunakan adalah kuesioner kepatuhan diet pasien PGK. Penelitian ini dilakukan pada bulan Januari 2023. Penelitian ini menunjukkan skor kepatuhan diet pada pre test kelompok kontrol menunjukkan 63% responden memiliki kepatuhan tinggi dan post test diperoleh hasil 81% responden memiliki kepatuhan tinggi. Pada kelompok eksperimen pre test didapatkan 55,6% responden mempunyai kepatuhan sedang, dan post test didapatkan 63% responden mempunyai kepatuhan tinggi. Hasil uji t independen menunjukkan tidak terdapat perbedaan skor kepatuhan diet setelah diberikan intervensi antara kedua kelompok (p value 0,716 > α = 0,05). Tidak terdapat pengaruh dukungan peer group berbasis sharing terhadap kepatuhan diet pasien PGK yang menjalani hemodialisis di Ruang Hemodialisis. Oleh karena itu disarankan kepada rumah sakit untuk menyusun rencana kegiatan pendidikan kesehatan minimal seminggu sekali, sehingga dapat meningkatkan derajat kesehatannya dan bagaimana mencegah keparahan selama perawatan.

Kata Kunci: *Diet; Pendidikan kesehatan; Pasien PGK; Dukungan peer group; Kepatuhan*

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How to Cite : Anndy Prastya, Fitria Wahyu Aryanti, & Atikah Fatmawati. Sharing Based Peer Group Support on Dietary Compliance of CKD Patients Undergoing Hemodialysis. *Jurnal Kesehatan Dr. Soebandi*, *12*(2), 135–141. https://doi.org/10.36858/jkds.v12i2.554

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Introduction:

Chronic kidney disease (CKD) is an impaired glomerular filtration rate (GFR) of less than 60 ml/minute or 1.73m^2 albuminuria of at least 30 mg per 24 hours, or signs of kidney damage (eg, hematuria or structural abnormalities such as polycystic or dysplastic kidneys and for more than 3 months) (Chen et al., 2020). As a result of chronic kidney failure, hemodialysis is necessary. Hemodialysis is the most effective treatment for chronic kidney disease and is useful for removing toxins from the body (Rolo, 2022). The main management for the success of CKD clients undergoing hemodialysis is adherence to therapeutic regimens.

Complications that often occur due to non-compliance in CKD patients can disrupt several organs in the body (Alligood, 2015). Patients with hemodialysis measures are at risk of developing diseases with cardiovascular disorders 10 to 20 times higher than healthy people. Hemodialysis will increase the risk of hypertension and other heart problems. Clients with chronic kidney disease should be provided with health education about life management and compliance, medications, eating habits, and the many steps needed to manage the condition and live a productive life (Rolo, 2022). The most important dietary adaptations, especially carbohydrates, protein, sodium, potassium, phosphorus, and fluid intake, are needed to reduce the risk of morbidity and mortality in CKD patients (Opiyo et al., 2019).

It is important for CKD patients undergoing hemodialysis to maintain dietary compliance. This can reduce the risk of complications arising from long-term decline in kidney function. For hemodialysis patients, limiting certain food intake is important to reduce the accumulation of these metabolic wastes in the blood and to reduce the development of co-morbidities such as hypertension, proteinuria, and other heart and bone health complications (Rysz et al., 2017). Dietary restrictions are recommended for prevent damage to kidney function and thereby slow the risk of morbidity and mortality (Opiyo et al., 2019).

Riskesdas 2018 data shows the prevalence of chronic kidney disease in Indonesia is 0.38% of the total population in Indonesia with a proportion of hemodialysis of 19.33% of the diagnosis. While in East Java it shows 0.29% of the entire population in East Java (Kementrian Kesehatan Republik Indonesia, 2019). Data *Indonesian Renal Registry 2018* showed that 132,142 people had undergone hemodialysis and there would be an additional 66,433 new patients who would be given hemodialysis, while in East Java 9,607 people were recorded as new patients who would undergo hemodialysis.

From Luis's (2016), data obtained that more than 50% of dialysis patients consumed inadequate food intake from the recommended diet for CKD patients on the one hand and excess intake of phosphorus, sodium, calcium and potassium on the other. Evidence on dietary restrictions indicates that adherence is a challenge for many CKD patients with more than half of adult patients with CKD not adhering to their prescribed diets. (Cupisti et al., 2018). Because nutrition is the most modifiable lifestyle factor in the management of CKD, it is important that adherence to food recipes and the food environmental factors that influence food accessibility, availability, acquisition, and preparation in their context are well understood in order to prescribe the most appropriate modified diet for these patients (Opiyo et al., 2019). Then it is needed something support system which can motivate clients with CKD to improve their quality of life.

Peer Group Support has been shown to be effective in helping people manage mental health in long-term conditions, such as cancer and *HIV/AIDS* and other chronic diseases. Type and duration Peer Group Support can be structured differently depending on the environment and service objectives but can include learning, mentoring, friendship, one-on-one support or group sessions (Wood et al., 2022). This study aims to determine the effect sharing based peer group support on dietary adherence of CKD patients undergoing hemodialysis in the Hemodialysis Room.

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Methods:

This study used a quasi-experimental design with a two-group pre-post test design approach. The population of this study were all patients who underwent regular hemodialysis in the hemodialysis room as many as 225 respondents. Researchers use techniques simple random sampling with a sample size of 54 respondents. Intervention is given by involving 2-3 patients who have been undergoing hemodialysis for more than 5 years as facilitators/mentors to carry out *sharing* to each intervention group containing 9 respondents. To equalize the content of the material that will be given to respondents, the facilitator is given modules and learning program units about dietary compliance in CKD patients. The modules and learning program units are first explained to the facilitator who has been appointed for each intervention group, so that what is delivered will be the same for each group. In each group, discussions and questions and answers were held regarding CKD and diet rules, led by the facilitator. Each group member can ask questions and share experiences. The intervention is carried out only once.

To collect data on respondents' dietary adherence, researchers used a dietary adherence questionnaire for CKD patients which refers to indicators of ability to choose food, adherence to diet, and consistency in implementing diet. The data that has been collected is then analyzed using an *independent t-test*. This research has received appropriate research ethics from the Health Research Ethics Committee of Sidoarjo Regional Hospital with number 893.3/034/438.5.2.1.1/2023.

Results:

Table 1. Demographic data

Category	Experiment		Control	
	n	%	n	%
Age				
26-35 Years	5	18,5	3	11,1
36-45 Years	7	29,5	2	7,4
46-55 Years	9	33,3	12	44,4
56-65 Years	6	22,2	10	37
Gender				
Male	15	55,6	18	66,7
Female	12	44,4	9	33,3
Education				
Elementary school	1	3,7	1	3,7
Junior high school	6	22,2	9	33,3
High school	15	55,6	9	33,3
College	4	14,8	8	29,6
Master	1	3,7	0	0
Work				
Civil servant	1	3,7	3	11,1
Private Officer	3	11,1	6	22,2
Self-employed	0	0	2	7,4
Retired	3	11,1	2	7,4
Housewife	11	40,7	7	25,9
Unemployment	8	29,6	7	25,9
Part time	1	3,7	0	0
Hemodialysis duration				
< 1 year	5	18,5	2	7,5
15 years	12	44,4	10	37
> 5 Years	10	37,1	15	55,5

Based on table 1, it is known that almost half of the experimental group respondents with early elderly aged 46-55 years had undergone dialysis as many as 9 people with a percentage of 33.3%. Meanwhile, in the control group, the average age of the respondents was 46-55 years, which means that the respondents were in their early old age, and 12 people (44.4%) had undergone dialysis. From the gender category, data were obtained in the experimental group that almost all of the respondents were male, as many as 15 respondents (55.6%). Meanwhile, in the control group, it was found that almost all respondents were male, 18 respondents (66.7%). For the education category, the most recent educational data from the experimental group was high school, with 15 people (55.6%). Meanwhile, the most recent education data for respondents in the control group were 9 junior high school students (33.3%) and 9 high school students (33.3%). Occupational data obtained from the experimental group most respondents worked as housewives, namely 11 respondents (40.7%). While data from the control group respondents mostly worked as housewives, namely as many as 7 respondents (25.9%) and unemployed, namely as many as 7 respondents

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ISSN : 2527-7529 (OnLi

(25.9%). Data on the length of time undergoing hemodialysis showed that almost half of the respondents had undergone hemodialysis for 1-5 years, namely 12 respondents (44.4%). Whereas in the control group most of the respondents had undergone hemodialysis for more than 5 years, namely 15 respondents (55.5%).

Table 2. Dietary compliance in CKD patients undergoing hemodialysis prior to the procedure sharing based peer group support

Variable	N	Mean	Median	SD	Min-Max
Pre-Test Experiment	27	83,85	82	12.218	57-114
Pre–Test Control	27	87,93	88	13.035	68-111

Based on table 2, variables *pre test* in the experiment, it is known that the average respondent has a value of 83.85 which means that the respondent is in moderate compliance, with a minimum value of 57 and a maximum value of 114.*pre tes* control it is known that the average respondent has a value of 87.93 which means that the respondent is in high compliance with a minimum value of 68 and a maximum value of 111.

Table 3. Dietary compliance in CKD patients undergoing hemodialysis prior to the procedure *sharing* based *peer group support*

Variable	N	Mean	Median	SD	Min-Max
Post-Test Experiment	27	102,6	102	11.449	85-126
Post–Test Control	27	98	94	10.813	72-120

Based on table 3, variables*post test* control it is known that the average respondent has a value of 102.6 which means that the respondent is in high compliance, with a minimum value of 85 and a maximum value of 126. P*ost tes* control it is known that the average respondent has a value of 98 which means that the respondent is in high compliance with a minimum value of 72 and a maximum value of 120.

Table 4. Effect of sharing based on peer group support on dietary adherence of CKD patients undergoing hemodialysis in the Hemodialysis Room of Sidoarjo Hospital in 2023

Group tested	**Mean *Post-Test***
Experimental Group (n=27)	102,6
Control Group (n=27)	98
Independent T Test (*p-value*)	0.176

Based on table 4. shows that there is no difference in the average adherence to the diet after being given an intervention in the form of sharing based peer group support on CKD patients between the experimental group and the control group (*p value* 0.716 > $\alpha = 0,05$).

Discussion:

Based on table 2 on the groups *pre* in the experiment before being given the intervention, it was found that most of the CKD patients undergoing hemodialysis were in the moderate adherence category with a mean value of 83.85. This could be due to the education level of the majority of respondents who were high school as shown in table 1 that the majority of respondents who had graduated from high school had a moderate level of compliance, namely 15 respondents (55.6%). According to Notoatmodjo (2014), there are several factors that influence adherence, such as predisposing factors which include adhered beliefs, geographic location, desire to recover and education. Researchers assume that a person's education is influential because someone who has a higher education, then the ability to catch information is also higher. A person's knowledge is influenced by many factors such as education, experience and facilities. Education is what makes a person to receive and get good information from other people and the mass media, if a lot of information is obtained.

Whereas in the control group, before the intervention was given, it was found that

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most of the CKD patients undergoing hemodialysis were in the high adherence category with a score of 87.93. This can happen because of most the controls group *pre* had undergone hemodialysis for more than 5 years as shown in Table 1 regarding the length of time the patient underwent hemodialysis occurred in a span of > 5 years by 15 respondents (55.5%). The results of the interview, the longest duration of the patient undergoing hemodialysis is more than 10 years and good dietary management must be carried out for the rest of the patient's life. During the interview the reason the patient has survived so far is having the motivation to live. Motivation is a factor that will encourage someone to carry out a certain activity, therefore motivation is sometimes interpreted as a driving factor for a person's behavior in carrying out a desire to be achieved (Edy Sutrisno, 2017). Researchers argue that the long time of hemodialysis is related to adherence to the treatment regimen. CKD patients undergoing hemodialysis have different reactions, in patients who have a positive attitude such as being sure of their recovery and being patient with the illness they are experiencing, this will cause the patient to comply with the treatment they are undergoing. Conversely, if the patient shows a negative attitude such as anger, stress, which can trigger complications or other diseases that will arise.

Based on table 3 on the results of special data after the post-test was carried out in the experimental group, the mean value was 102.67 in the High compliance category. Post-test results in the experimental group showed an increase in knowledge of dit adherence in CKD patients undergoing hemodialysis.

This is in accordance with the statement made by Narr *et al.* (2019), which emphasizes that through activities *peer group*, the elderly are given the opportunity to convey all their thoughts, feelings and problems they are currently experiencing so that they will get reinforcement, motivation, and empathy from their older peers. *Peer group* can be interpreted as a group that has the same problem so that they feel the same fate and feel there is no difference in status between one person and another. Thus, individuals will get more appreciation than their peers so that they will feel psychological satisfaction because they feel valued for their existence and get attention.

Researchers assume, with the method *Peer group support* patients can share their experiences when they were first diagnosed with CKD by a doctor. With the experience that has been passed by old patients, it can provide motivation and direction to patients who will undergo hemodialysis. So that when undergoing Hemodialysis new patients will not be anxious or restless, because they have found other patients telling stories and sharing experiences.

Meanwhile on *post test* the control group the results of the data showed an average value of 98. In this group because no intervention was given, the researchers left it alone so that the respondents searched for information independently and gave the same questionnaire questions as the group *post test* experiment. When interviewed, the respondents obtained information independently and sometimes there were doctors, nurse on hemodialysis room, and practical students who provided health education during scheduled Hemodialysis times. Only a small portion seek sources of information through information media (TV/Internet, books/magazines). Respondents already understood what a diet for chronic kidney patients was because most of the respondents underwent hemodialysis >10 years (55.5%). According to Barbosa *et al.*, (2017), the duration of hemodialysis affects the quality of life because by undergoing hemodialysis for a long time, patients will increasingly understand the importance of compliance in carrying out hemodialysis and patients will already feel the benefits if they carry out hemodialysis regularly and the consequences if they do not carry out hemodialysis, so this affects the quality life.

Based on table 4. shows that there is no

difference in the average adherence to the diet after being given an intervention in the form of Sharing based peer group support on CKD patients between the experimental group and the control group (*p value* 0,716 > α = 0,05). This is because the difference in compliance scores between the experimental group and the control group is not too far.

Another thing that causes no difference between the control group and the experimental group is regarding the similarity in the type of information source of dietary compliance. Both the control and experimental groups received similar information about dietary adherence, the experimental group received information from peers (peer group) while the control group received information from nurses/doctors which contained almost the same information. This is in line with Jhon (2022) statement, that there is an effect of the role of the teacher as a motivator and peer on the learning achievement of class II students at Tanjung Rahu Public Elementary School, Pakpak Bharat Regency, odd semester of the 2021/2022 academic year. The research above illustrates the level of information giving where doctors/nurses are likened to teachers and peers. As long as the information conveyed is the same, it will be able to influence behavior, in this case, dietary compliance behavior of CKD patients.

The limitation of this research is that the intervention was only given once. Suggestions for further research are to add intervention sessions so that respondents can get more information from peer group results.

Conclusions:

This study concluded that there was no difference in the average dietary compliance score of CKD patients undergoing hemodialysis in the hemodialysis room at Sidoarjo Hospital in 2023 between the control group and the peer support group-based sharing intervention group. This is because the content of information about the diet of CKD patients received between the two groups of respondents is the same but the sources of information are different. However, in both groups, there was an increase in the average score of dietary compliance between before and after the intervention. This is a reference so that hospitals can increase efforts to educate adherence to diet to CKD patients undergoing hemodialysis so that patients are able to comply with all treatment regimens, it is hoped that the quality of life of hemodialysis patients will be better.

Acknowledgement:

As an attempt sincere appreciation, the author expresses gratitude to Dr. Atok Irawan, Sp.P as the director of the Sidoarjo general hospital who has given permission to conduct research at the Sidoarjo General Hospital. Do not forget also to research respondents namely CKD patients who had taken the time to be willing to be respondents in this study and also nurses in the hemodialysis room at Sidoarjo General Hospital who had provided the opportunity to conduct research.

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