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Review Article

Educational Media Related to Nutrition and Fluids for Patients with Chronic Kidney Failure: Literature Review

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Abstract

Aim: This review aims to identify and analyze the existing literature related to educational media regarding the provision of nutrition and fluid education in patients with kidney failure

Methdos : This research is a literature review approach where the research sources are taken from two databases, namely Pubmed and Google Scholar.Articles were screened using inclusion criteria published in 2015-2021, in the form of journals, English and Indonesian, quasi-experimental research designs and True Experiments, so that six suitable articles were found. The keywords used were "Nutrition Education OR fluid education AND Kidney Failure OR Chronic Kidney Failure; "Chronic Kidney Failure" AND Education on Nutrition and Fluids AND Educational Media".

Results : Of the 2,203 articles that meet the requirements as many as 6 articles. The results of the review show that various media are used for health education related to nutrition and fluids in patients with kidney failure. The media used from simple ones such as booklets to complex applications such as audio-visual media for health education about diet in the intervention group with various media showed significant results compared to the control group. From the results of the review, it was found that simple to complex educational media showed a significant influence on the patient's fluid intake, the patient's quality of life, thereby improving the quality of life.

Conclusions : Health education with various educational media can improve dietary compliance of CKD patient, so that nurses are expected to be able to apply various educational media, so that they can meet the nutritional and fluid intake needs of patients with chronic kidney failure.

Keywords :
Chronic Kidney Disease, Education, Nutrition and Fluids

INTRODUCTION

Incidence rate Disease *Chronic Kidney Disease*(*CKD*) which has increased every year and so that it becomes one of the world's health problems (1). Chronic Kidney Failure was ranked 18th in the 2010 list of causes of death. Found around 8 hingga 10% adults with kidney failure and also millions of people died because of complication caused by Kidney Failure (2). according to WHO, chronic kidney failure patients

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increased 50% in 2013 from previous years. Psuffer from kidney failure highest found in the country Indonesia (3).

The Indonesian Nephrological Association (Pernefri) survey estimates that around 12.5% of kidney function declines. Patients with kidney failure in Indonesia 150,000 cases are caused by hypertension and diabetes mellitus. A sizable increase in a year of 5.2% or 112 patients (4). Results of Riskesda Doctor's Diagnosis in Population Age 15 Years by Province in 2013-2018. The highest was in North Kalimantan 6.4%, followed by North Maluku 6.2% and followed by North Sulawesi 6.1% (5).

Several prevention and treatment strategies kidney failurethrough the Clinical Research Program,as well as supported by the Brazilian Society of Nephrology made two communication tools Internet, that is channels on YouTube and Instagram social media which share digital content about CKD which is conducted by ISN (International Society of Nephrology). Although the goal of both is to spread information about the prevention and treatment of this disease, it is believed that these two channels can reach various population groups who have low knowledge of CKD, such as the general public (6).

CKD requires major changes in lifestyle and diet. The high rate of mortality and morbidity in CKD patients is estimated at around 20% hup to 70% caused by non-adherence to treatment, care, diet, as well as nutrition in CKD patients.

One of the nutrients that effective in CKD patients maintain a diet that is protein, calories, potassium, sodium, fospore, calcium to liquid. Parameter complexity against CKD that is difficulty in following the dietary scope of food intake has been established(7).

Provision of nutrition in reducing complications and improving quality of life aims to overcome symptoms due to kidney disorders and prevent complications due to the progression of kidney damage. Proper nutrition can be done by understanding the pathophysiology that occurs in patients with kidney failure and the hemodialysis process selected as renal replacement therapy (8).

Diet compliance in patients with Chronic Kidney Failure (CKD) in undergoing hemodialysis is an important thing to note, because if it is not adhered to it will have an impact on the condition of the body so that it can cause acute and chronic complications where there is a buildup of harmful substances from the rest of the body's metabolism. Patients will feel shortness of breath, edema in part or all of the body, and if this is not treated immediately will cause death (9).

Education carried out by nurses is one of the indicators of intervention given to clients, but so far education is given conventionally or in the form of leaflets, booklets, and flip charts, while education using audio and video is still very rarely done by health workers. available, especially education about limiting nutrition and fluid intake in patients with chronic kidney failure. Educationhealth which is conducted nurse most focuses on the physical aspect, while education on psychology and spirituality have the most important benefit as one of the processes CKD patient recovery. The literature found no review identifying available educational media to improve patient adherence to fluids and nutrition.

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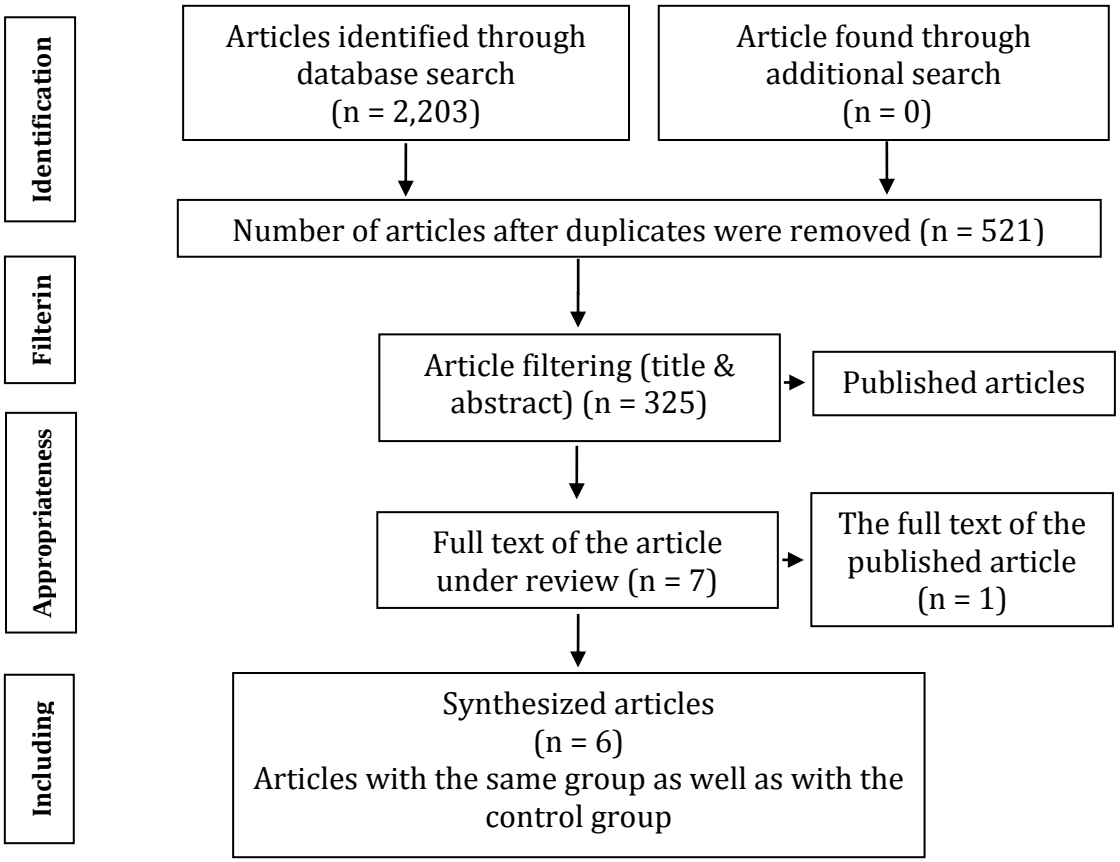
METHODS

We included all research articles with the following design: epidemiological studies (observational studies), case studies and also experimental research articles (pure or quasi-experimental) using a control group or not using educational media in kidney failure patients, the topics were adherence to nutrition and liquids, published in the last 5 years (from 2015 to 2020). While the exclusion criteria in the literature review are research articles in both Indonesian and English are paid for, only in abstract form, and are not published Initial search results based on inclusion and exclusion criteria found 2,203 articles (Pubmed 2,005 articles, Google Scholar198 articles) then filtered to find 521 articles and articles that met 325 articles that met the inclusion requirements and 319 published articles so that 7 articles were found and 1 article was excluded. because it doesn't fit. with the requirements of a literature review so that 6 articles are obtained which can be seen in the scheme below.



RESULTS

From the literature review table found 6 articles obtained from the final results of the Pubmed search, 3 articles and Google Scholar 3 articles that met the inclusion requirements with article results, namely: articles from Indonesia 4 articles and from Iran 2 articles with a quasi-experimental research design 4 articles and True Experiment 2 articles, with the intervention given using leaflet 1 media, using telegram 1 article based on android, audio video 2 articles and media booklet 1 article (10).

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From the literature review table, it can be explained that the characteristics of the level of knowledge, education, age, and gender affect a person's response to education provided by health workers as well as a person's age and gender. This can be seen from all the samples in the literature review study, most of which have a higher education level with an average high school education, with the average age being at a young age of 30-49 years and most of (11).

From the table of review articles, it can be seen the results obtained where education in patients with Chronic Kidney Failure (CKD) using video and audio visual-based education, booklets and telegrams improves health education, knowledge and attitudes of CKD patients in limiting fluid and nutritional intake so as to improve quality of life. Chronic Kidney Failure patients.

1. Video and Audiovisual Based Education Improve Knowledge, Attitudes towards Diet and Quality of Life
   Research by Simanungkalit, with dresearch design quasi-experimental with a sample of 80 people. Data collection is done by assessing attitude CKD patient and level of knowledge about nutrition of CKD patients, and then given nutrition education using audio-visual and assessing and reassess knowledge and attitudes of CKD patients after the intervention (12). Instruments usedin assessing the attitudes and knowledge of CKD patients, namely a questionnaire about knowledge of eating patterns and attitudes of CKD patients. After the intervention in the form of edRespondents were again given a questionnaire to see how far their level of knowledgeknowledge and attitudes about diet in CKD patients. The final result found an increase in the level of knowledge and attitudes CKD patient, This can seen from the results of statistical tests with a p-value of 0.0001 so it can be concluded that There is a significant effect of providing audio-visual education on the level of knowledge and attitudes of CKD patients.
2. Booklet-Based Education Improving dietary compliance of hemodialysis patients.
   Research by Amber conducted research in Dr. Hospital Tjitrowardojo Purworejo with researchquasi experiment, pre-post test with control and intervention groups on 48 respondents 24 respondents each, with usebooklet in the intervention group sebagai research instrumentan which contains about dietary guidelines in patients temporarily undergoing hemodialysis, then given health education tagainst both groups (13). The results show that there isthe difference between the intervention group and the control group where the results were found that the level of dietary compliance of patients undergoing hemodialysis is lowerhigh compared to the control group, which can be seen from the statistical results found p value = 0.000 in the intervention group while in the control group found p = 0,103.
3. Telegram Based Education Improves the quality of life

Salahshour also conducted research in Wine Iran at one of the Hemodialysis Centers with a True Experiment study design on 94 patients (48 intervention and 46 control). In the intervention group, researchers conducted healthy nutrition training in CKD patients within four weeks by using video media that has been connected to the internet and the respondent has become a member of the telephone applicationegram (14). After two months, the two groups fill the research instrument on quality of life of kidney disease and perform laboratory examinations of Na, K, P, Ca and Mg to be

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compared between the two groups and found improvement in quality of life in the control group both from the instrument given or for laboratory examinations, so it is concluded that e-learning is effective in improving the quality of life and serum electrolytes of CKD patients undergoing hemodialysis.

DISCUSSION

One problem Common in CKD patients who are temporarily undergoing hemodialysis, namely poor adherence to diet that can affect disease progression impactful negative for the healing process and increaseand the morbidity rate of CKD patients. s diet trainingmost of them show beneficial effects both in terms ofto the patient's knowledge of nutrition da diet, attitude nor results of laboratory examinations of patients currently undergoing hemodialysis. Good education of patients can increase awareness of the need nutrition so as to improve the quality of health and quality of life of patients.

Low patient quality of life CKD is often associated with inadequate nutrition or diet, and can cause complications in patients. CKD patients have special nutritional needs so that it requires continuous health education to overcome various problems both physical and emotional aspects so as to improve the patient's quality of life. Moshtagh et al, 2011 explained that diet education for CKD patients who temporarilyundergoing hemodialysis can improve health status mentally. Ibrahimi, H. et al. 2016 also explained that health education can improve quality of life of CKD patients and can reduce levels of anxiety and depression in patients.

A person's information is influenced by several factors, namely knowledge and skills. The more information a person gets, the more knowledge and skills a person has. Based on this matter, it is necessary to provide education related to fluid intake and nutrition in the form of video media to patients and families.Improving the quality of life of CKD patients while undergoing hemodialysis canlevel by providing video-based education (15).

Media in the form of audio video is a material or study to build individual conditions in order to gain knowledge, attitudes, and skills. Media is also a function of learning resources for individuals, namely as distributors, liaisons, messengers and so on. The function of learning media as a learning resource is its main function, (16).

In this era of globalization, mobile phones, tablets or ipads are things that become technological advances in society. It is easier for the public to access information from these devices because they are easy to carry anywhere and can be accessed at any time. Because this is what triggers researchers to make an innovation in health education based on Android applications. Providing health education for CKD patients based on Android applications is a new way that can be applied in the world of health services, especially in Indonesia. This education can help nurses and health workers in providing information to patients and families about nutrition, diet and fluid restrictions in CKD patients undergoing hemodialysis through personal devices. Through this android application, Patients and families can access it easily by downloading it independently on the Playstore. Based on the results of this innovation, it was found that there was a good positive impact for patients by understanding the information they needed in an easy and simple way.

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This will have an effect on increasing their knowledge and compliance in maintaining their lifestyle and nutritional intake. Changes in dietary compliance and restriction of fluid intake are required for these patients which include: proper intake of protein, fluids and sodium. Potassium restriction as well as adequate calorie and supplementary intake are also necessary. Identifying factors that can influence the lack of adherence to diet and fluid intake restriction is very important for health workers to intervene to improve patient compliance (17).

Widhawati, conduct research quantitative on 40 respondents using the quasi . method post-test experimentobtained that health education by using video media affect patient compliance CKD in limiting intake nutrition and fluids. Health education in general can be interpreted as an effort to invite/influence others to behave in a healthy life (18).

Health education is expected to change the knowledge, attitudes and behavior of the target group. Health education can be done through various media, both print media and electronic media. The use of leaflets, posters and non-printed media such as electronics, power points, and films as promotional media that can be used to increase knowledge and attitudes (19).

Nutrition education media is one element that supports the success of nutrition education, especially for patients or individuals. Interesting educational media can increase one's curiosity about the content of the media itself. Education by using the media also makes it easier for the giver of material to convey it. In addition, the media can also simplify material in the form of images and sound that can be easily accepted by someone who provides education by using audio-visual media that utilizes all five senses of respondents compared to booklets or leaflets that only use the sense of sight. so that it can make respondents feel bored or bored. lazy to read so that is the reason why researchers provide education using audio-visual. According to Maulana, 2009 explain bahwa one of the five senses The only senses that can transfer knowledge to the brain are the five senses of the eye between 75% to 87%, while 13% to 25% is transferred by the five sensesain.While Simankulit, 2018 describes the method media using videos as nutrition education it can be well received by respondents so that respondents have a great curiosity about the content delivered and look serious because audio-visual media uses images and sound in the video.

Health Education aims to change attitudes and behavior someone or group in the health sector especially special in patients with chronic renal failure to comply with fluid intake with a family support approach. Educational media is a tool used to help deliver educational or teaching materials and information to patients (20)

CONCLUSIONS

The media used to limit fluid and nutritional intake are video and audiovisual, as well as booklets and telegrams, where these media can increase the knowledge of kidney failure patients in limiting fluid intake, thus educational media can improve the quality of life of patients with chronic kidney failure. With the educational media above,

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it is hoped that nurses can apply education with various existing media, and the media can be understood and accepted and can also be accessed by patients and families.

Table of existing articles on Review

No	Writer's name Year & Place	Educational Media	Research design	Characteristics of Respondents	Intervention	Measurement	Results
1	Duzalan OB, Pakyuz, SC (2018). Istanbul Province, Turkey,	Audio visual	Quasi experiment (two groups)	80 respondents divided: 40 Control Group 40 Intervention Group	Health Education about diet was given to the intervention group. Education was provided face-to-face three times a week by filling out a diagnosis form on the Diet Knowledge Scale for Hemodialysis Patients (SDKHP), and the Diet Behavior Scale on Hemodialysis Patients (SDBHP). The educational session lasts 30-45 minutes. Educational materials and appointments for 1 month are then given to patients. At the second meeting the SDKHP and SDBHP were replenished. In this study, it was not explained what media were used during education, only face-to-face education was explained.	Using Diet Knowledge Scale in Hemodialysis Patients and Diet Behavior Scale in Hemodialysis Patients.	Health education improve knowledge and attitudes of CKD patients about nutritional and fluid intake who are currently undergoing hemodialysis
2	Ebrahimi H, Sadeghi M, Amanpour F, Dadgari A (2016). Iran	Audio visual	True Experiment	respondent sebmany 99 people invited into an intervention group and a control group.	Health Education (Nutrition Education) was given 12 weeks. In the intra groupinvention using leaflet media which contain	The instruments used in this study were a questionnaire on the subject's dietary status	Education about diet of HD patients increases knowledge

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No	Writer's name Year & Place	Educational Media	Research design	Characteristics of Respondents	Intervention	Measurement	Results
					information the importance of adherence to diet, harmful effects of the buildup of toxins in the blood and tissues, a list of taboos and fluid intake limits with a period of 40-24 weeks. 60 minutes.	and a standard questionnaire to assess the patient's quality of life.	
3	Naseri-Salahshour V, Sajadi M, Nikbakht-Nasrabadi A, Davodabady F, Fournier A (2020). Iran	Telegram	Experiment Pure	94 person (intervention group 48 people and control group 46 people)	Intervention group get healthy nutrition training for 4 weeks with video media connected to the internet and have become a member of telegram. After two months, respondents from both groups given a questionnaire about the quality of life of kidney failure and perform laboratory tests and compared the two results.	Questionnaire about Kidney Disease Quality of Life and laboratory examination.	Video-based training effectively improve the quality of life of CKD patients and laboratory results show good results.
4	Relawati A., Pangesti AW, Febriyanti S, Tiari S (2018). Indonesia	Booklet	Quasi experiment, pre-post test with control and intervention groups	48 respondents were divided into control (n=24) and experimental (n=24) groups	Comprehensive education twice a week to patients and the intervention group through the hemodialysis diet guidebook, while the control group was only given the hemodialysis diet guidebook.	Questionnaire on diet compliance In patients with chronic renal failure who Undergo hemodialysis	The level of adherence of the intervention group was higher than thea control group.
5	Simanungkalit, L. et al. (2018) Indonesia	Audio visual	Quasi experiment, (Pre post test group)	80 respondents	Nutrition education with AudioVisual (it is not explained how long the education will take).	Measurements were carried out using the Knowledge and Attitude Questionnaire	Knowledge and attitude towards diet increased after being given the

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No	Writer's name Year & Place	Educational Media	Research design	Characteristics of Respondents	Intervention	Measurement	Results
					However, the researcher assumes that it is carried out at that time or that education is only carried out once.		intervention
6	Relawati A, Syafriati A, Al Hasbi H, Fitria PN (2018). Indionesia	Video	Quasi Experiment, (Pre post group test)	30 respondents	Educational Counseling with android-based video for two days	The research instrument is a questionnaire regarding the knowledge of CKD patients on prestriction of nutrient and fluid intake.	Video education is effective in increasing the knowledge of chronic kidney failure patients

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