

Review: Knowledge of Dietary Management among Haemodialysis Patients

Sumathi P.S. Unnithan¹

¹Faculty of Nursing, Widad University College, Kuantan, Pahang, Malaysia

**Corresponding Author: sumathi@widad.edu.my*

ABSTRACT

INTRODUCTION: Stage 5 of chronic kidney disease (CKD) also known as End stage renal disease (ESRD) is when the kidneys are only functioning at 10 to 15 percent of their normal capacity. In this stage, ESRD patients need RRT such as kidney transplant, peritoneal dialysis (PD) or haemodialysis (HD). Haemodialysis is a process that use a man - made membrane to filter out toxins, waste products, and excess fluid from the blood when kidney function is impaired. Between haemodialysis treatment session, wastes can build up in blood. A well-balanced diet is necessary for them to stay fit as their kidneys are no longer functioning at its full capacity. To achieve good dialysis outcome, dialysis patient's needs to carefully monitor their dietary and fluid intake to control the waste products and fluids accumulated between haemodialysis treatments. **OBJECTIVE:** This project to assess the knowledge on dietary management among haemodialysis patients using literature review from year 2012-2017. **METHODS:** The design for this project was a descriptive survey study. Most of the study from the literature review chosen for this project done at haemodialysis units in India and one of the studies done in Iran. Total respondent ranging from 30 to 60 of patient undergoing haemodialysis using purposive sampling technique, purposive nonprobability, and non-probability convenience technique. **RESULT:** The findings of the literature review that was chosen for this project revealed that the level of knowledge was poor regarding dietary regulations among the respondent. Only 15% - 20% of the overall respondent had good knowledge on dietary. **CONCLUSION:** Level of knowledge on dietary regulation among haemodialysis patients is very poor. Patient education and nutritional support are necessary to increase knowledge regarding diet regulation among dialysis patients.

Keywords: CKD, ESRD, RRT, PD, HD.

1.0 INTRODUCTION

End stage renal disease (ESRD) is the last stage (stage five) of chronic kidney disease (CKD). This means kidneys are only functioning at 10 to 15 percent of their normal capacity. Kidneys are important organs that contribute to overall well-being. When kidney function is this low, they cannot effectively remove waste or excess fluid from blood. Kidneys are also responsible for other functions that support the body, such as balancing electrolytes and producing certain hormones. When CKD develops into ESRD, dialysis or a kidney transplant is necessary to stay alive. ESRD patient requires Renal Replacement Therapy (RRT), in the form of either Haemodialysis (HD), Peritoneal Dialysis (PD) or kidney transplantation to survive (Smart., et al, 2014). In the year 2000, approximately 205,000 and 240,000 patients with ESRD were maintain on chronic dialysis in Japan and in the United States, respectively each accounting for roughly 20% and 24% of the estimated world chronic dialysis patients.

Haemodialysis (HD) is a process that use a man - made membrane to filter out toxins, waste products, and excess fluid from the blood when kidney function is impaired. HD treatment also balances the body's calcium, and potassium levels. Dialysis treatment extends life expectancy significantly, but it alone is not enough to manage ESRD, so it is used in conjunction with dietary restrictions and medication to slow down the progression of ESRD (Munuais-ja, 2013.)

Between HD treatment session, wastes can build up in blood. Therefore, dietary control can prevent the waste product to build up. A well-balanced diet is necessary for them to stay fit as their kidneys are no longer functioning at their full capacity. For example, to get rid of the waste products and fluid from their blood. It is essential for HD patients to have the right amount of protein, calories, fluids, vitamins, and minerals each day. HD patients need to carefully plan their meals and should avoid foods and beverages that contain potassium and phosphorus to protect the function of the heart, sodium to control blood pressure and weight gains between dialysis sessions (Judith, 2016).

HD patients requires a much higher intake of protein than the average persons. Too little protein and calorie intake often leads to protein energy malnutrition. Therefore, to achieve

good dialysis outcome, dialysis patient's needs to carefully monitor their dietary and fluid intake to control the waste products and fluids accumulated between HD treatments.

Knowledge on dietary management continues to play a vital role for HD patient's rehabilitative care for them to stay fit as their kidneys are no longer functioning at its full capacity. This project was done to assess the knowledge on dietary management among HD patients using literature review from year 2012-2017.

1.1 BACKGROUND TO THE STUDY

The background of the study that was done from the literature was from various places. The study conducted by Shashikumar, (2014) was done at Haemodialysis unit of K.L.E's Hospital and MRC Belgaum, India. In another study conducted by Srinivassan, (2014), the study was done at Dialysis Department of Melmaruvathur Adhiparasakthi Institute of Medical sciences, Kanchipuram Hospital, India. The next study written by Parul, et al. (2017) was done at Salokaya Haemodialysis Centre, New Delhi and Paras Hospital, Gurugam, India. The next study conducted by Parisa, et al. (2015), the study was done at Iran. In the study conducted by Gangadhar, (2017), the study was done at District Hospital at Karwar, Karnataka, India.

1.2 PROBLEM STATEMENT

From the statistic report that was conducted by Chan, et al. (2012), reported prevalence of non-compliance rate among HD patients varies widely, ranging from 30-74% due to fluid restrictions, 2-81% due to diet restrictions, 17-46% due to medication and 0-32% dialysis respectively. In another article written by Baines, et al. (2000) claim that successful HD is highly dependent on the lifetime commitment of patients to four aspects of regimens, namely dietary guideline, fluid restriction, medication and dialysis. Although compliance to HD regimens is critical in the management of HD patients as failure to do so has been associated with increased risk of medical complications including higher risk of cardiac disease, poorer quality of life and decreased life expectancy has been widely reported.

In the study conducted by Huda, et al (2004), claim that malnutrition is an evident problem in 40% – 50% of patients with ESRD. It is associated with increased infections, poor

wound healing, muscle wasting, increased mortality and cardiovascular disease caused by inadequate dietary intake. Malnutrition is common in dialysis patients with a prevalence ranging from 18% to 56% (Fouque, et al. 2008). It is a major risk factor of mortality in patients on dialysis and impairs quality of life (Dong et al., 2011).

One of the main causes that increases the risk of medical complications among haemodialysis patients were non-compliance to dietary restrictions. Knowledge on dietary management among haemodialysis patients is very important to be compliant. Therefore, this paper is aimed to study the knowledge on dietary management among haemodialysis patients.

1.3 SIGNIFICANCE OF RESEARCH

The result of this study will help the haemodialysis unit to acknowledge the importance of dietary knowledge among their patients. It will also help to continue the method of health education on their diet which are being practised at present.

1.4 RESEARCH OBJECTIVE

1.4.1 GENERAL OBJECTIVE

To identify the level of knowledge regarding dietary management among haemodialysis patients.

1.4.2 SPECIFIC OBJECTIVE

To identify the prevalence of knowledge regarding dietary management among haemodialysis patients.

1.5 OPERATIONAL DEFINITIONS / DEFINITION OF TERMS

1.5.1 Knowledge

Refers to the correct response of patients undergoing haemodialysis regarding their dietary management in terms of knowledge scores.

1.5.2 End Stage Renal Disease

End stage renal disease (ESRD) is that stage of kidney impairment, which is irreversible, cannot be controlled by conservative management alone, and requires dialysis or kidney transplantation to maintain life.

1.6.3 Haemodialysis

Haemodialysis involves shunting the patient's blood from body through a dialyzer in which diffusion and Ultra filtration occur and then back into the patient's circulation.

1.6.4 Dietary management

It refers to type of food patients should take, should not take or which should be restricted and how to maintain adequate intake of both macro nutrients like CHO, Protein, fat and micronutrients like sodium, potassium, calcium, phosphate, and fluid to perform their daily activities and to maintain quality of life.

2.0 LITERATURE REVIEW

2.1 Introduction

According to Leyburn Library, Washington & Lee University (2007) the usage of the literature review is to see what has and has not been investigated, identify data sources that other researchers have used, to learn how others have defined and measured key concepts, develop alternative research projects, and contribute to the field by moving research forward. Reviewing the literature to see what came before, and what did and did not work for other researchers. Literature review also help us to understand, and critically evaluate research in the respective field. Lastly, it provides evidence that may be used to support our findings.

In this topic, the researcher will discuss the prevalence of knowledge on dietary management among haemodialysis patients.

2.2.1 Prevalence of knowledge on dietary management among haemodialysis patients.

A research title evaluation of nutritional knowledge in terms of dietary sources of protein, phosphorous, potassium and fluids restriction in haemodialysis patients was conducted

by Montazeri, et al. (2012) in Golestan Hospital in the Ahvaz Jundishapur University of Medical Sciences. 50 patients were recruited for this study using a simple random sampling method. The objective of the research was to evaluate the knowledge of haemodialysis patients in term of the need for dietary protein, electrolyte, and fluid restriction. The method of the study was descriptive analytical study using questionnaire. The result of this study showed 26% of the subjects had a poor knowledge of nutrition, 58% had average and only 16% had a good level of knowledge.

In another study conducted by Hegazy, et al. (2012) with the title of “Study of the effect of dietary counselling on the improvement of end stage renal disease patients” which was carried out at El Haram dialysis centre, Giza, Egypt using sample of 37 patients that undergoing regular haemodialysis at the centre. Stratified random sampling was used to get the sample for the study. The method of the study was an intervention study. The result showed that majority of the sample (90.2%) knew nothing about nutritional.

In other journal written by Huda et al. (2004) the title of the study was “Assessment of the nutritional status of end stage renal disease patient on maintenance haemodialysis. This study was done at Al-Gamhouria Teaching Hospital using sample of 50 patients on maintenance haemodialysis. The objective of the study is to assess the nutritional status of ESRD patients on maintenance haemodialysis. The method of the study was cross-sectional study using interviewed and collected data included history and physical examination. The result of the study showed only 14% of subject had knowledge and another 86% lack of knowledge about avoidable food.

Result from the research done by Lee, et al. (2001) titled “dietary and fluid compliance in Chinese haemodialysis patients”, the study was used a cross-sectional study design using a descriptive correlational design. The data were collected using structured interview with questionnaire. The sample of this study was used 62 of chronic HD patients in largest dialysis centres in Hong Kong. The aim of this study was to assess the compliance behaviour and to understand the relationships among compliance behaviour, dietary knowledge, and health beliefs of HD patients in Hong Kong. The result of this study showed about 20.8% of subject had poor knowledge, 76% had average knowledge and only 3.2% had good level of knowledge

regarding dietary management. As a conclusion, most of the research showed the respondent had poor knowledge on dietary management.

3.0 METHODOLOGY

3.1 Introduction

Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. Typically, it encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques. (Irny, et al. 2005). The methodology is the general research strategy that outlines the way in which research is to be undertaken and, among other things, identifies the methods to be use in it. These methods, described in the methodology, define the means or modes of data collection or, sometimes, how a specific result is to be calculated (Howell, 2013).

In this chapter we will discuss on research design, study setting, population, sample, development and description of the tool, data collection with procedure and plan for analysis.

3.2 Research Design

A research design is the set of methods and procedures used in collecting and analysing measures of the variables specified in the research problem research. Polit and Hungler (1999) describe the research design as a blueprint, or outline, for conducting the study in such a way that maximum control will be exercised over factors that could interfere with the validity of the research results. The research design is the researcher's overall plan for obtaining answers to the research questions guiding the study. Burns and Grove (2001) state that designing a study helps researchers to plan and implement the study in a way that will help them obtain the intended results, thus increasing the chances of obtaining information that could be associated with the real situation.

The research design that was chosen in this project is a descriptive survey study. A descriptive survey study defined as a brief interview or discussion about a specific topic. According to Aggarwal (2008), descriptive survey research is devoted to the gathering of information about prevailing conditions or situations for description and interpretation.

3.3 Research Setting

The research setting refers to the place where the data are collected. In this research project, we collected literature review from year 2014 - 2017. The research setting of the literature review that was chosen, which was conducted by Shashikumar, J. (2014) was done at Haemodialysis unit of K.L.E's Hospital and MRC Belgaum, India. Next literature review conducted by Srinivassan, (2014), the study was done at Dialysis Department of Melmaruvathur Adhiparasakthi Institute of Medical sciences, Kanchipuram Hospital, India. The third literature review written by Parul, et al. (2017) was done at Salokaya Haemodialysis Centre, New Delhi and Paras Hospital, Gurugam. The fourth literature review conducted by Parisa, et al (2015), the study was done at Iran. The last literature conducted by Gangadhar, et al. (2017), the study was done at District Hospital at Karwar, Karnataka.

3.4 Population and Sample

3.4.1 Population

The target population is the total group of individuals from which the sample might be drawn. A sample is the group of people who take part in the investigation. The people who take part were referred to as "participants". Polit and Hungler (1999) define a population as the totality of all subjects that conform to a set of specifications, comprising the entire group of persons that is of interest to the researcher and to whom the research results can be generalized. The target population were taken from the literature review that was chosen for this project were chronic renal failure patients undergoing hemodialysis in Dialysis Unit of K.L.E's Hospital and MRC Belgaum, India (Shashikumar, 2014), the patients undergoing hemodialysis treatment in Outpatient department of selected Hospital, Kanchipuram (Srinivassan, 2014), patients undergoing hemodialysis of Salokaya Hemodialysis Centre, New Delhi and Paras Hospital, Gurugam (Parul, et al., 2017), 20 to 60 years old patients undergoing hemodialysis in Iran (Parisa, et al., 2015), and patients undergoing dialysis in District Hospital Karwar, Karnataka (Gangadhar, et al., 2017).

3.4.2 Sampling Method

Sampling is the process of selecting a representative group from the population under study. LoBiondo-Wood and Haber (1998) describe a sample as a portion or a subset of the research population selected to participate in a study, representing the research population.

In this project, we use the method of Purposive sampling technique. Purposive sampling is a sampling technique in which researcher relies on their own judgment when choosing members of population to participate in the study. The sampling are no rules, just get the sample but with contain purpose. Purposive sampling is a non-probability sampling method and it occurs when “element selected for the sample are chosen by the judgment of the researcher. Researchers often believe that they can obtain samples by using a sound judgment, which will result in saving time and money” (Black, K. 2010).

However, the literature review that was chosen for this project were used purposive non-probability by Shashikumar, (2014), non-probability convenient sampling by Srinivassan, (2014), purposive sampling technique by Parul, et al. (2017), purposive sampling technique by Parisa, et al. (2015), and lastly purposive sampling method by Gangadhar, et al. (2017).

3.4.3 Sample Size

A sample is “a smaller (but hopefully represented) collection of units from a population used to determine truths about the population” (Field, 2005). According to Uma Sekaran in Research Method for Business 4th Edition, Roscoe (1975) proposed the rules of thumb for determining sample size where sample size larger than 30 and less than 500 are appropriate for most research, and the minimum size of the sample should be 30% of the population.

The sample for this project is selected from 5 journals from 2014-2017. 51 chronic renal failure adult patients undergoing haemodialysis for more than three months (Shashikumar, 2014), 30 patients undergoing haemodialysis (Srinivassan, 2014), 50 adult

patients undergoing haemodialysis (Parul, et al. 2017), 60 patients undergoing haemodialysis (Parisa, et al. 2015), and 30 patients undergoing dialysis (Gangadhar, et al. 2017).

3.4.4 Inclusion and Exclusion Criteria

According to Spall. (2007), inclusion criteria are characteristic that the prospective subjects must have if they are to be included in the study, while exclusion criteria are those characteristics that disqualify prospective subjects from include or participate in the study.

Inclusion criteria of the study are chosen from journals that assess the knowledge in dietary among dialysis patients. Exclusion criteria for our study is from the journals that assess the knowledge in dietary from other people such as caregiver, healthcare worker and publics.

The inclusion criteria are the patients who were diagnosed as chronic renal failure and undergoing haemodialysis for more than three months, the patients who were willing to cooperate in the study, and the patients who were able to read or speak in Canada and English and the patients who were undergoing peritoneal dialysis, the patients who were not willing to cooperate and the patients in critical condition as exclusion criteria (Shashikumar, 2014). The inclusion criteria include the male and female patients that above the age of 25 years old, the patient that available or who were willing to also participated the patient who can speak Tamil and the exclusion criteria were the patients undergone major kidney surgery and patients that have any mental illness (Srinivassan, 2014). The inclusion criteria were adult patients undergoing haemodialysis at Salokaya Haemodialysis Centre and the exclusion criteria did not mention by the author (Parul, et al. 2017). The inclusion criteria related to demographic characteristics (age 20 to 60 years old) and included male and female respondents and exclusion criteria did not mention by the author (Parisa, et al. 2015). The inclusion criteria were the patient's undergoing dialysis in District Hospital at Karwar, Karnataka and the exclusion criteria did not mention by the author (Gangadhar, et al. 2017).

3.5 Instrument/Tool

Research instruments are measurement tools such as questionnaires or scales, designed to obtained data on a topic of interest from research subjects. Data collection instruments refer

to devices used to collect data such as questionnaires, tests, structured interview schedules and checklists (Seaman 1991).

The instrument of this project was to use previous research that related to our objective. The instruments that have been used from the literature review that was chosen for this project were the questionnaire and checklist (Shashikumar, 2014), structured questionnaires (Srinivassan, 2014), multiple-choice questionnaires and structured interview schedule (Parul, et al. 2017), Questionnaire (Parisa, et al. 2015), structured questionnaire (Gangadhar, et al. 2017).

3.6 Ethical Consideration

Ethical consideration is a written a letter to ask permission from college/institution to do research. Permission from the place that the research will be conducted. According to Creswell (2014), when research involves human subjects, obtaining informed consent from them is essential.

The study conducted by Shashikumar, (2014) got the permission to conduct the study by Jali, the medical Director and Chief Executive and Consultant Diabetologist of K.L.E' S Hospital, Belgaum. Meanwhile, the study conducted by Srinivassan, (2014) was approved by experts of research committee. In another study conducted by Parul, et al. (2017), the study protocol was approved by the Departmental Research Committee. The study conducted by (Parisa, et al. 2015) was approved by Scholars Research Library. The next study conducted by (Gangadhar, et al. 2017) was approved by experts in the field of Public health Nursing.

3.7 Procedure of data collection

Data collection is the process of gathering and measuring information on targeted variables in an established system, which then enables one to answer relevant questions and evaluate outcomes.

Polit and Hungler (1999) define data as “information obtained during the course of an investigation or study”. The procedure of data collection on this study is surfing the journals and other information from the internet.

In the study conducted by Shashikumar, (2014), the analysis and interpretation of the data were based on data collected through structured interview schedule then the results were computed using descriptive and inferential statistic based on objective of the study. In another study conducted by Srinivassan, (2014), the data gathered were analysed by using both descriptive and inferential statistics. Besides, in the study conducted by Parul, et al. (2017), the analysis and the interpretation of data collected was done by computing the frequencies and percentage. In the study conducted Parisa, et al. (2015), the data collected were analysing using SPSS software version 16. In the next study conducted by Gangadhar, et al. (2017), the data was organized and analysed based on the objective by using descriptive and inferential statistics.

3.8 Pilot Study

A pilot study is a small-scale preliminary study conducted to evaluate the feasibility, time, cost, adverse events and improve upon the study design prior to the performance of a full-scale research project (Hulley, et al. 2007).

In the study written by Shashikumar, (2014), the pilot study was conducted but the author did not mention the sample size and population for the pilot study. Meanwhile, in the study conducted by Srinivassan, (2014), there was no pilot study was done. However, the tool that was used in the study was prepared by the researcher based on literature review under the guidance experts and based on objective which had been assessed and evaluated, accepted by experts of Research Committee. In the next study conducted by Parul, et al. (2014), there is no pilot study was documented in the journal. However, content validity of the tool was established by five experts in the field of nursing and medicine. There was no pilot study was done in study conducted by Parisa, et al. (2015). However, the answer from the questionnaire that have been used to analyse the data was based on the Likert scale scores. In the other study conducted by Gangadhar, et al. (2017), there was no pilot study was done. However, the tool was validated by experts in the field of public health nursing.

3.9 Data analysis

Data analysis is the process of systematically applying statistical and logical techniques to describe and illustrate, condense, and recap, and evaluate data. According to Shamoo and Resnik (2003), various analytic procedures “provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuation) present in the data”.

According to Lecompte and Schensul (1999), data analysis is the process of reducing large amounts of collected data to make sense of them (table 3.1).

Table 3.1. Data Analysis

Objective	Research question	Statistic
To identify the prevalence of knowledge regarding dietary management among haemodialysis patient	What is the prevalence of knowledge regarding dietary management among haemodialysis patients?	Descriptive frequency

3.10 LIMITATION

The limitation of the study is those characteristics of the design or methodology that impacted or influenced the interpretation of the finding from the research. Limitation are the constraints on generalizability, applications to practice and utility of findings that are the result of the ways in which initially chose to design the study, or the method used to establish internal and external validity or the result of unanticipated challenges that emerged during the study (James, et al. 2004)

This study has limited of time frame. Besides, it is difficult to access the journals from the internet due to registration requirements and issues. Data and information only can be collected from google and google scholar that has limited information.

4. RESULT

4.1 Introduction

The results section is where the report findings of this study based on the methodology that applied to gathered information. In this project, the result will be described according to the project objective that was to assess the knowledge of dietary management among haemodialysis patients.

4.2 Prevalence of knowledge

Figure 4.1: Distribution of level of knowledge scores of dietary regulations in CRF patients undergoing hemodialysis (Shashikumar,.2014).

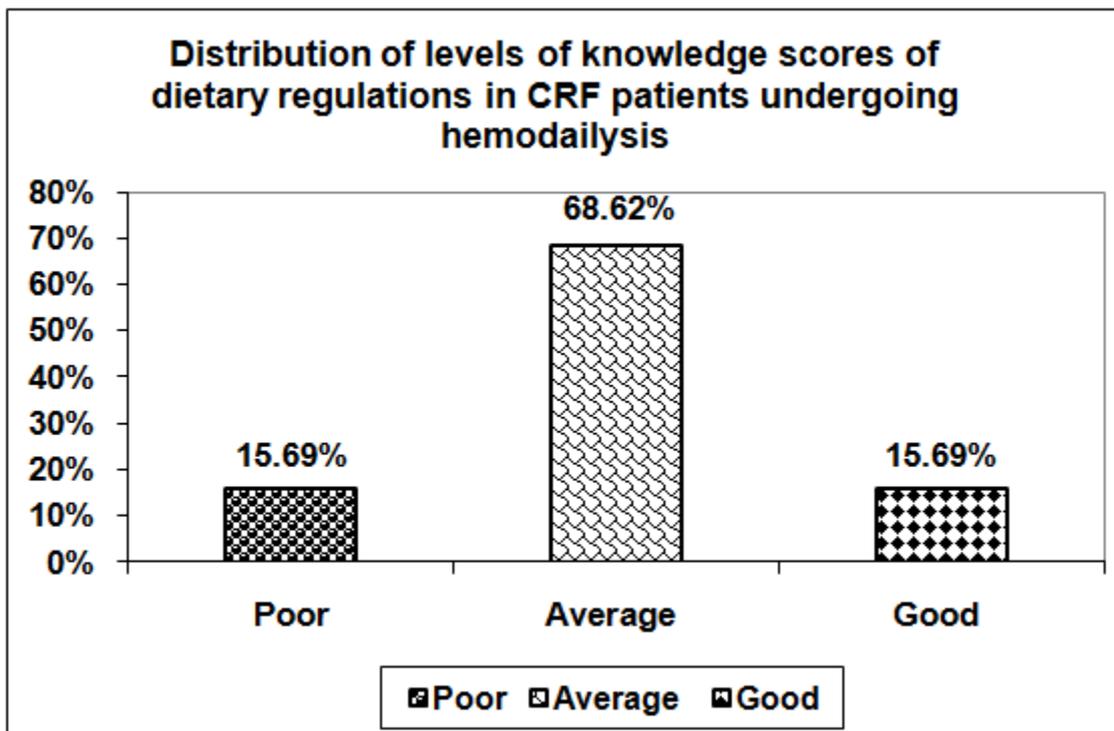


Table 4.1 Distribution of level of knowledge scores of dietary regulations in CRF respondent undergoing hemodialysis (Shashikumar, J.2014).

Level of knowledge	Frequency	Percentage
--------------------	-----------	------------

Less X 1SD <21-poor	8	15.69%
X-1SD to X + 1SD (21 to 31) – Average	35	68.62%
X + 1SD \square 32- Good	8	15.69%
TOTAL	51	100%

Figure 4.1 and table 4.1 showed the knowledge scores of dietary regulations in CRF patients undergoing hemodialysis (Shashikumar, 2014). The result showed 8 (15.69%) had poor knowledge, 35 (68.62%) had average knowledge, and 8 (15.69%) had good knowledge regarding dietary regulation in chronic kidney failure patients undergoing hemodialysis.

Table 4.2: Level of knowledge of haemodialysis patients (Srinivassan, K. 2014)

Level of Knowledge	Frequency (n=30)	Percentage (%)
Inadequate	4	13.33
Moderately Adequate	20	66.66
Highly Adequate	6	20

The table 4.2 showed the frequency and percentage distribution of knowledge assessment of adult patients undergoing haemodialysis regarding their dietary management done by (Srinivassan, 2014). The result shown 4 (13.33%) had inadequate level of knowledge, 20 (66.66%) had moderately adequate level of knowledge while other 6 (20%) had highly adequate level of knowledge.

Table 4.3 Frequency and percentage distribution of knowledge assessment of adult patients undergoing haemodialysis regarding their dietary management. (Parul, et al. 2017).

Knowledge	Range	Frenquency (n=50)	%
Good	21-31	1	2%

Average	11-20	29	58%
Poor	1-10	20	40%

The table 4.3 showed the frequency and percentage distribution of knowledge assessment of adult patients undergoing haemodialysis regarding their dietary management (Parul, et al 2017). The result showed only 1 (2%) had good knowledge, 29 (58%) had average knowledge, and 20 (40%) had poor knowledge.

Table 4.4: Absolute and relative distribution of the subjects in terms of nutritional training needs in both intervention and control groups before the intervention (Parisa, et al 2015)

Group nutritional needs assessment before intervention	Intervention		Control	
	Number	Percent	Number	Percent
Independent	21	70.0	22	73.3
Semi-dependent	9	30.0	8	26.7
TOTAL	30	100	30	100

p value =0.77

Table 4.5: Absolute and relative distribution of the subjects in terms of nutritional training needs in both intervention and control groups after the intervention (Parisa, et al. 2015).

Group nutritional needs assessment after intervention	Intervention		Control	
	Number	Percent	Number	Percent
Independent	29	96.7	24	80.8
Semi-dependent	1	3.3	6	19.2

TOTAL	30	100	30	100
-------	----	-----	----	-----

p value = 0.04

The Table 4.4 and 4.5 showed absolute and relative distribution of the subjects in terms of nutritional training needs in both intervention and control groups before and after the intervention (Parisa, et al 2015). The result shows 70% of patients in the intervention group and 73% in the control group were independent in term of nutritional self-care before the intervention. These percentages were increased to 96.7% after the intervention for the intervention group and 80% for the control group. Compare with before and after intervention, there was significant difference between before and after intervention which is p-value=0.04 (<0.05).

Table 4.6: Knowledge scores of haemodialysis patients (Gangadhar, et al. 2017)

Level of Knowledge	Total of Participant	Percentage
Good level of knowledge	5	16.7%
Average level of knowledge	20	66.6%
Poor level of knowledge	5	16.7%
Total	30	100%

The table 4.6 knowledge scores of haemodialysis patients (Gangadhar, et al.2017). The results showed only 5 (16.7%) had good level of knowledge, 20 (66.6%) had average level of knowledge, and 5 (16.7%) had poor level of knowledge.

5. DISCUSSION

5.1 INTRODUCTION

According to Annesley, (2014) the purpose of the discussion is to interpret and describe the significance of the findings considering what was already known about the research

problem being investigated, and to explain any new understanding or insights about the problem after taken the findings into consideration. Based on our project, the discussion will be according to our objective which is to assess the knowledge of dietary regulation among haemodialysis patients. Compared with the literature review from 2001 to 2012 and from 2014-2017, we want to find out if there any improvement regarding knowledge of dietary regulation among haemodialysis patients.

5.2 PREVELANCE

The research result that done by Shashikumar, (2014) showed only 15.69% had good knowledge regarding dietary regulation in chronic kidney failure respondents and 68.62% had average knowledge. Similar result was obtained by Srinivassan, (2014) which is 20% of respondent had good level of knowledge and 66.66% had an average level of knowledge.

In another study done by Gangadhar, et al. (2017) the results also the same, 16.7% respondent had good knowledge and 66.6% had an overall average level of knowledge regarding dietary management. One of latest study that was conducted by Parul, et al (2017), the result showed only 2% of the respondent had good knowledge, and 58% had an average knowledge.

In a comparison study on nutritional needs assessment before and after that was conducted by Parisa, et al (2015), result shows 70% of patients in the intervention group and 73% in the control group were independent in term of nutritional self-care before the intervention. These percentages were changed to 96.7% after the intervention for the intervention group and 80% for the control group. The findings showed there is a significant difference between these two groups statistically after the intervention ($p=0.04$).

Comparison between previous study that conducted in another journal written by Lee, et al (2001) in largest dialysis centres in Hong Kong, the result showed only 3.2% had good level of knowledge and 76% had average level of knowledge regarding dietary management. The findings showed similar result with the study by Srinivassan, (2014).

In other journal written by Huda et al (2004) that was done at Dialysis Unit in Al-Gamhouria Teaching Hospital the result of the study showed only 14% had knowledge and

another 86% lack of knowledge about avoidable food. This result is similar to the study conducted by Shashikumar, (2014).

In the study by Montazeri. et al. (2012) in Golestan Hospital in the Ahvaz Jundishapur University of Medical Sciences India, the result of this study showed only 16% had a good level of knowledge and 58% had an average of knowledge. The result was tolerable with a study by Gangadhar, (2017).

In another study conducted by Hegazy, et al. (2012), was carried out at El Haram dialysis centre, Giza, Egypt, the result showed that most of the sample 90.2% knew nothing about nutritional and only 7.8% had knowledge of nutritional. This is finding like the study by Parul, et al (2017).

5.3 IMPLICATION

The findings of the literature review that was chosen for this project revealed that the level of knowledge was poor regarding dietary regulations among the respondent. There was only 15% - 20% of the overall respondent had good knowledge on dietary. Patient education and nutritional support are necessary to increase knowledge regarding diet regulation among dialysis patients. This was proved by the research result that was conducted by Parisa, et al (2015).

5.4 RECOMMENDATION

This project was done to know the level of knowledge on dietary regulation among haemodialysis patients. As a result of this project the literature reviews statistically proved that there were lack of dietary knowledge among haemodialysis patients. The haemodialysis units can use this result to enhance the dietary knowledge among the patient by demonstrating the correct diet that should be taken therefore the patient can visualise the diet. This method was suggested by Olakumbi, et al. (2018) saying that visualisation has proven benefits in supporting knowledge transfer. The Haemodialysis unit also can use a structured teaching programme on dietary management of chronic renal failure patients as suggested by Srinivassan, (2014). Then

the unit should do research to determine the level of knowledge on dietary regulation among haemodialysis patients in HTAA after the intervention.

5.5 CONCLUSION

In conclusion, through our project we realised the level of knowledge on dietary regulation among haemodialysis patients is very poor. Therefore, the Head of Nephrology Department should act and take a role in the term of improving the level of knowledge in dietary regulation among haemodialysis patients to increase patient's compliance, prevent medical complications such as hyperkalaemia, heart problem, and increase quality of life.

REFERENCES

- Allah, E. S. A., Oraby, E. E. S. E. S., & Ibrahim, R. G. (2015). Effect of Diet Therapy Program on Dietary Knowledge and Practice of Elderly Patients on Regular Hemodialysis. *American Journal of Nursing*, 4(3), 131-137.
- Creswell, J.W. (2014). *Research Design:Qualitative Quantitative and Mixed Methods Approaches* (4th ed). Thousand Oaks, CA: Sage. English Language Teaching; Vol 12 (1).
- Fadiran, O. A., Van Biljon, J., & Schoeman, M. A. (2018, March). How can visualisation principles be used to support knowledge transfer in teaching and learning?. In *Information Communications Technology and Society (ICTAS), 2018 Conference on* (pp. 1-6). IEEE.
- Hegazy, I. S., El Raghy, H. A., Abdel Aziz, S. B., & Elhabashi, E. M. (2013). Study of the effect of dietary counselling on the improvement of end-stage renal disease patients. *Mansoura Nursing Journal*. Vol 5(2)
- Huda, O.B., Saeed, M.,A., Amel, A.A., & Khaled A.A. (2004). Assessment of the nutritional status of end-stage renal disease patients on maintenance hemodialysis. *Saudi Journal of Kidney Diseases and Transplantation.*;15(4):455-462.
- James, H., (2013) *Research Limitations and the Necessity of Reporting Them*. *American Journal of Health Education*, 35(2), 66-67.

- Jawadagi, S. “A descriptive study was designed “A study to assess the knowledge and practices of dietary regulations in chronic renal failure patients undergoing hemodialysis at KLE’S Hospital and MRC Belgaum”. *Journal of Nursing and Health Science*, 3(1), 36-45.
- Pollock, J. B., & Jaffery, J. B. (2007). Knowledge of phosphorus compared with other nutrients in maintenance dialysis patients. *Journal of Renal Nutrition*, 17(5), 323- 328.
- Saini, P., & Arora, S. (2017). A Study to Assess the Knowledge of Patients Undergoing Hemodialysis Regarding Their Dietary Management at Selected Hospitals of NCR and Delhi. *International Journal of Nursing Science Practice and eSearch*. Vol3(2).
- Sharifi, N., & Montazeri, R. S. (2014). Evaluation of Nutritional Knowledge in Terms of Dietary Sources of Protein, Phosphorous, Potassium and Fluids Restriction in Hemodialysis Patients. *Jentashapir Journal of Health Research*, 5(4), 1-5.
- Spall. H.G.C. (2007). Eligibility Criteria of Randomized Controlled Trials Published in High-Impact General Medical Journals: A Systematic Sampling Review. *JAMA*, 297(1):1233-40. Pubmed.
- Srinivassan, K. (2014). A Descriptive Study to assess the knowledge on Dietary Management among Chronic Renal Failure Patients undergoing Haemodialysis at Selected Hospital, Kanchipuram. *International journal of Nursing Education and Research.*, Volume 2(3).