

Malnutrition in elderly people, possible cause and nursing interventions

A Qualitative Literature Review

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Abstract

Malnutrition is one of the main health related issue faced by elderly all over the world and it is often under recognized. Therefore, the aim of our study is to investigate how well it is recognized by nurses and their possible role to tackle malnutrition in elderly. Our study is based on qualitative method in which we have analysed articles by using inductive content analysis method. Orem`s self-care deficit theory is used as a theoretical framework as it is universal theory which views nutrition as a part of self-care and it mainly focuses on self-care, self-care deficit and nursing system. After analysing the articles, it is found that both nurses and elderly play an important role in malnutrition. Malnutrition has multifactorial causes and contributing factors. Therefore, its definition varies from person to person. It is necessary for elderly to understand malnutrition and to be educated on their nutritional status. Education and understanding are also important for nurses to manage and evaluate the malnutrition at early stages in elderly.

The study covers the causes of malnutrition in elderly and how nurses can identify or prevent malnutrition in elderly by using screening and assessment tools.

Language: English Key words: Malnutrition, Elderly people, Screening tool, Nurses roles, Nutritional education.

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1. Introduction

Malnutrition is very common in elderly and is often underrecognised. Malnutrition and loss of weight are risk factors for most of the diseases and it has adverse impact on operational level and psychosocial welfare of the elderly. There is an extensive changes in the condition of malnutrition in aged. Malnutrition is frequently non-noticeable by nurses and there is absence of documents of the nutritional deficiency in nursing homes. Malnutrition is mainly common between patients suffering from dementia and it decreases their functional abilities. A few other diseases are also recognized to relate with malnutrition, such as paralysis, Parkinson's disease and diseases of the mouth and throat. Food is necessary to everyone and it plays an important role in the development of persons. Nurses are responsible for making sure that patient eat enough to fulfil their energy requirements. Having a proper diet enriched in all nutrients is essential for wellbeing of individual. Often nurses reports about patient not eating enough but miss to report why nurses need to know how to convince the patient while keeping in mind their point of view as well. (Suominen, Sandelin, Soini & Pitkala, 2007).

It can be seen in different health care settings that elderly is at risk of malnutrition. There could be several possible reasons for the cause of malnutrition. Malnutrition is one of the problems of today's world, but it was first proposed by Florence Nightingale in 1860. Malnutrition is still existing because many people can't afford good quality food which cause different health related problems ("Malnutrition", 2014).

2. Background

Malnutrition in elderly people is not well detected by health professionals. Lack of essential nutrients causes different type of physical as well as mental disorders. Statistics shows that more than 60% are at risk of malnutrition, around 20%-30% are malnourished and just over 10% are in normal conditions (Saarela, R. K., Muurinen, S., Suominen, M., Savikko, N., Soini, H., & Pitkälä, K. 2017). There are different factors, types, causes and effects of malnutrition which can be detected early by using screening tools and make a care plan for patients.

2.1 Definition

Malnutrition is a situation in which a person does not take enough diet or fluid intake according to his body needs that causes health problems. Malnutrition is persisting issue also in the well-developed parts of the world and is more common in the elderly than in other adult individuals. (Kvamme, Grønli, Florholmen & Jacobsen, 2011).

2.2 Statistics in Finland

According to the survey done in Helsinki City Hospital in 2007, out of 1043 patients, 75.2% were female and their average age was 81 years and remaining were male with mean age of 75 years. Among them only 15% were capable to change their positions themselves. After test, malnourished were 56.7% (MNA<17) and who are at risk of malnourished were 40.7% (MNA 17-23.5). According to nurses only one-fourth of patients have malnutrition Patients with malnutrition have mean body mass of 45.0 kg and their BMI was 17.2 kgm⁻² (Suominen, Sandelin, Soini & Pitkala, 2007).

Other studies are also done between the period of 2003 – 2011 in nursing home (NH) and assisted-living home (ALF). Following table shows the result of the study done in that period.

Characteristics		NH Residents		ALF Residents	
		2003 (N=1987)	2011 (N=1576)	2007 (N=1377)	2011 (N=1585)
MNA	< 17 (malnourished)	28.6	31.7	12.7	20.2
	17-23.5 (at risk)	60.3	61.8	65.4	61.9
	>23.5 (normal)	11.1	6.5	21.9	17.9
BMI		23.7 (5.0)	24.2 (5.2)	25.3 (5.1)	25.5 (5.3)
Oral nutritional supplement, %		4.7	10.9	3.2	10.6
Vitamin D supplement, %		31.3	78.0	48.1	68.7

(Saarela, R. K., Muurinen, S., Suominen, M., Savikko, N., Soini, H., & Pitkälä, K. 2017).

2.3 Assessment tools

The nutritional level of elderly individuals is efficiently measured through commonly used Mini Nutritional Assessment (MNA) tool as well as other screening tools. Between all, MNA stands easy and substantial tool for assessing nutritious level in elderly persons. MNA is also appropriate in methodical and huge researches . The MNA tool is used in various studies among elderly living in different situations. According to the MNA, deficient nutritional level is related to more people being subject to hospital death, an extended stay in hospitals and high number of people being sent to elderly care homes. (Suominen, M. et al. (2005).

2.4 Factor affecting malnutrition

There are several factors that causes malnutrition between elderly people. These factors can be divided into lifestyle, psychological and physical and will also related together. Physical factors may involve poor craving, imperfectly fitting of dentures affect the capability to chew food, not able to smell and taste, disability and illness e.g. stroke, tumour, dysphagia and Parkinson's disease. Lifestyle factors affect individual's capability to sustain their nutritional consumption might be involve decrease in income, isolated and aloneness, holy or cultural beliefs, shortage of food options e.g. individuals living in nursing homes possibly have lessened range of menus, or the effects of decreased movement in accordance to shopping or making food. The aged people should be given with and have approach to food and drink at all time that fulfil their needs. (Dera. M, Woodham. D,2016). Psychological factors may involve uncertainty, hopelessness, sadness or dementia, which can have impact on individual's ability or wish to make food. (Flecher. J,2015).

2.5 Types of malnutrition

Definition of malnutrition is imbalance of functions due to the lack or excess of nutrition in a body. Obesity is also a malnutrition but mainly we consider malnutrition as a disease specifically to undernutrition not to obesity. There are some types of malnutrition which are associated with elderly people. Specific malnutrition is a type of malnutrition in which diseases like scurvy (lack of vitamin C) and osteomalacia (lack of vitamin D, phosphate and calcium) plays vital role, sudden malnutrition which are associated with the amount of food

intake due to various reasons like trauma, surgery or other mental pressure, recurrent malnutrition which means a lack of essential nutrients due to the repeated illness or poor nutrition intake and there is a type of malnutrition which generally shows late effect in the body which is known as long-standing malnutrition. Generally, there is a long period between nutritional deficiencies and its appearances in a body. (Rauscher, 2019).

2.6 Effects of malnutrition

Malnutrition has unfavourable effects on the physical and psycho-social welfare of persons by disposing to illness, adversely affecting its result and decreases the possibility of individuality. In spite of fact that it has turn into a main issue but still it stays under-identified, under-cured and frequently ignored by those responsible for the care of affected person for instance the aged. (Dera. M, Woodham. D,2016).

2.7 Nursing care

Malnutrition is frequently unidentified, undescribed and uncured which is an important issue in the society. Initial recognition of malnutrition all through nutritional screening is essential measure in treatment of malnutrition.

Nurses play important role in caring process and they make sure that quality care should be provided to all patient. The treatment plan varies for every individual depending on how much greater risk are they on. In caring process for malnourished patient, an “initial diet” approach is usually the first step to treat and prevent malnutrition. Food is available and recognizable as a first-line treatment. Drug treatment for long-lasting illness may also cause to poor nutritional level by affecting loss of craving, gastric problems and other variations in body function. Nurses should operate together with doctors and evaluate on person’s medication on daily basis to recognize any medications which might be cause of nausea or loss of weight and update them accordingly.

Mostly in all elderly care, assessment is essential to make sure the best possible result. Thus, patient’s weightiness and nutritional result must be observed on regular basis to make sure that the procedure chosen for treatment is working or not.

Those patients who are at high risk for them more intensive treatment is used including the utilization of oral nutritional supplements (ONS). They are quite helpful to inverse loss of weight, rebuild function and lean muscle mass and complete loss of tissue. (Shepherd, A.2013)

3. Theoretical framework

Theoretical framework provides the overview of why we have taken the preferred study investigation. The key focus aims of this research is on nurse's possibility to act as support and the patient's self-care. For this reason, the theoretical framework chosen for this study is Orem's theory of self-care deficit. Moreover, it is further divided into three small theories, the prerequisites are as follows: Growth and objectives of person's phases, Healthiness situations, progressive statuses, uses and spending of energy, environmental situations and all these prerequisites play key role in recognizing malnutrition and moreover this theory also provides us with the possibility to find out the causes of malnutrition together with nurse's interventions. (Smith 2012). According to Orem,

“Nursing is practical endeavour, but it is practical endeavour engaged in by persons who have specialized theoretic knowledge with developed capabilities to put this knowledge to work in concrete situations of nursing care”. (Orem 2001).

According to Orem in 2001, the observed implementation, nursing practically is meaningful and helpful in which qualified people relate to the theoretic understanding of nursing in practice and real. During the nursing care, the implementation of theoretic information must remain organized. Self-care deficit theory defines the connection between the development of abilities of person and their requirements.

3.1 Major Assumptions and Assertions.

In the early 1970s, the assumptions of this theory were formulated. In 2001, Orem was emphasizing the following five essential law of nursing.

1. Human being demands constant involvement: They involve in continuing communication on functionality and sustainability between themselves and their environments.

2. Human agency: Able to take action and decided dependently to get to know whatever they required and needed.
3. Adult human beings suffering deprivations: each individual is rare. It is an act that experienced throughout the self-care and people's participating make sure the sustainability.
4. Human agency: recognizing, creating and distributing care for themselves and other peoples.
5. Groups of human beings with organized association with several responsibilities for providing care and thoughtful decisions concerning themselves and other peoples.

Theory of Orem is very comprehensive that determined the below declarations: The theory of nursing systems, the theory of self-care deficit, and the theory of self-care. (Smith 2012):

The theory of nursing system: The theory of nursing system defines nursing is an activity that performed by person (nurses). The activities or actions are prepared and discharged the following assignment of the nursing group for persons or group of individuals with health-related problem. Care given, being able to do dependent care or self-care and prescription, detection and managing are included in it.

The theory of self-care deficit: It's play an important role in this theory. Self-care deficit is the link that happens among the self-care agency and self-care demand and its purpose is to make sure the self-care is less than the demand for self-care. The purpose of this theory self-care deficit is created to evaluate the necessity of nursing care. Nursing care is essential when the dependent care or self-care is provided to person is insufficient or unlimited.

Theory of self-care: Self-care is a care that performed by persons and by law it regulates the persons and appropriate to improve the constant living, better health, and development. This theory would also be described as an action system for the reason that it develops the idea of self-care, self-care demand and self-care agency for the basic of the obligatory activities and limit of the person promoting of the care. Self-care should be attained and situate that values must be followed by people. (Smith 2012)

4. Aim and problem definition

Our main aim of this study is to define the nutritional condition of elderly people, to find out how well it is recognized and to assess nurse's role in tackling malnutrition. Our research questions are as follows:

1. How well do nurses recognize malnutrition in elderly people?
2. What is the nurse's role in tackling malnutrition?

5. Research methodology

Research methodology is the procedures or methods applied to recognize, choose, process, and examine information about a topic. It is a methodical way to find a solution of a problem. Research methodology is defining those methods which used to collect significant information in a precise research study. Its aim is to gain the knowledge and provide the framework of this study. (S. Rajasekar, et al 2013).

5.1 Qualitative research

Qualitative research helps to study data from a directly research observation, in detail, open-ended interviews, and authored articles. Researchers are engaged in realistic review, reviewing real things to find out the description and construct case studies. (Patton, M. Q. 2005). Qualitative research helps to find out depth analysis of even small details in any particular research. Researchers can gain more knowledge and information however this methodology has drawbacks as it is time costly (Maher & Dertadian, 2017).

5.2 Systematic literature review

The objective of a systematic review is to give a comprehensive summary of existing literature associated with the research questions. The first thing is to do in literature review is to generate well-defined questions to help the review. The other thing is to find the most significant articles for literature. And then comes to the methodology section of the systematic literature review in which make a list of all the databases and references which

were searched. Literature review is important to find out the answers to many questions just by reviewing other published works. Literature review gives the combined results of many different published studies and provides even more accurate results or finding. Just considering one study we cannot simply rely on their results as there might be some factors which are affecting results such as fluctuations in data, experimenter bias, methodological errors and some other. (Baumeister & Leary, 1997).

The systematic literature review key focuses is to get the solutions to questions by finding, crucially estimating and participating the results of one literature or combining the results of many studies. Systematic literature review is a procedure which help to get an answer to a specific question in a specific field in which available literature is reviewed and examined. Systematic literature review takes a certain question and use certain method find out answers. In this review, literature should be identified, it should be relevant to your finding questions, all the data should be analysed, critically appraise literature should be picked out for the study and results should be taken out from the combination of all available literature. Systematic review is one of the best among all other research designs as it provides the most practical results or implications (Baumeister & Leary, 1997).

5.3 Data collection

Data collection is an important component of research in all type of studies. It is the procedure of collecting and evaluating the knowledge on focused variables in a created structure after that it can answer the related questions and generate the results.. (Elo et al 2014). There are various ways to collect data. We have assessed our articles from the following databases: CINAHL, EBSCO, PubMed, Ebook Central, BioMed and Science direct. The key words that we have used to search our literature were: Malnutrition, elderly people, qualitative and quantitative study, MNA, BMI, Finland, nutrition status, nurses' role, nursing interventions, eating and drinking difficulties. While searching different articles we have changed portal to get more results with our search words. Search tips were also followed and video tutorials were also helpful to search results.

5.3.1 Inclusion criteria

Selection criteria is very important for the research process. Inclusion criteria is the key features which help to find out the target answer for the researchers (Patino & Ferreira, 2018). In our literature we have used articles which were scientific, peer reviewed and were available in full text. Literature which was in English and published from 2000 to till date is included.

5.3.2 Exclusion criteria

We have excluded articles which were in other languages except English. Literature which was not scientific, full text and published before 2000 were excluded. The articles which have abstract only were also excluded.

5.4 Content analysis

Content analysis is the method which is used in both qualitative and quantitative way in order to gather the required information. Qualitative content analysis method is usually use to analyse the available data in nursing research. Objective of content analysis is to make a framework which will be helpful for further research process. In quantitative content analysis information is collected in form of numerical data whereas in qualitative content analysis information is collected within text. Content analysis is also done in an inductive and deductive way. For our thesis we have decided to use qualitative content analysis as we are going to collect the literature and reviewing the results of those literature in order to find out the answers of our questions. In this research inductive method is used to analyse the results. There are different steps involve in inductive content analysis to analyse the data and to derive result. In first step author reviewed the data and then raw data was organized. In second step, author re-read the articles and selected most relevant data and highlighted the meaningful data to make codes. In third step, data was grouped and was reduced by combining those categories with similar ideas and meanings. Therefore, subcategories were made. In last step, author generate a theme which eventually helped us to find our results. (Elo & Kyngäs, 2008).

Themes	Category	Sub-category
Assessment and recognition of malnutrition	Nutrition Assessment	Screening tools
		Dietary assessment
		Clinical assessment
	Proper education and training	Responsive to needs
	Aging in consideration	Biological changes
		Physiological changes
Nurses interventions to tackle malnutrition	Nutritional education	Nutritional education for nurses
		Nurses connection with other healthcare professionals
	Nutrients need for elderly	Individual care plan
		Required energy and nutrients.

5.5. Ethical consideration

When author follows the rules and regulations as required from the schools and use appropriate methods like use of information properly, maintain privacy, initiating no damage and prejudices in order to do research ethics could be considered as an appropriate and good scientific writing. (Ranjit Kumar 2014).

Authors are totally aware about the study, about research findings and its uses as well as if there is any negative impact of finding. There was no any harm was made to any participants of study during the research process either physically or mentally. Privacy was kept in mind

throughout the study. Any personal information regarding anyone involving in research are kept confidential. Authors of any materials used during study are mentioned as well. While using a statistic in a background, just data are taken into consideration and all other personal information are kept confidential.

6. Findings

Finding help us to make a connection between the data you have collected and analysed so far and the results concluded. Reporting content analysis in proper systematic way relies on the understanding of the reader and it's often challenging. (Elo et al 2014)

We have chosen 11 articles peer reviewed to find out our objectives. We formulated codes by understanding the facts and figures of the data and then classified into categories and sub-categories. From different categories, 2 themes were generated. Findings are derived form these categories and sub-categories.

6.1 Nutritional assessment

Malnutrition has become one of the major issues for today's world. Its recognition has been one of the issue for its cause. Assessment is basically the procedure which nurses use to find out the possible causes of malnutrition. There have been several methods used so far in order to identify the malnutrition whereas every method have its own pros and cons. (Christensson, Unosson & Ek, 2002). It is very much needed that to identify malnutrition among the elderly people. For these screening and assessment are highly recommended (Merrell, Philpin, Warring, Hobby & Gregory, 2012).

Assessment is a step in the nursing process that aims to identify the challenges facing the patient. Challenges are usually encountered after nurses intervene. For example, in patients suffering from broken bones and paralysis face nursing problems like ulcers and nutrition. (Bååth et al. 2008, Chernoff 2003).

6.1.1 Screening tools

In today's world, Malnutrition is one of the common problem for most of the developed as well as developing countries. There is various reason behind the cause of malnutrition and it is important that it should measure or be able to find out cause of malnutrition in elderly people. There are various tools that has been used to identify whether elderly people has malnutrition or not. These tools are implicated in various health sectors in order to know the elderly people are suffering from illness or not. (Christensson, Unosson & Ek, 2002). Some of the malnutrition screening tools have been described below.

Mini nutritional assessment (MNA): MNA is the used in most of the health sectors all around the world. This tool is used in order to find out the malnutrition in elderly people in early stage so that patients can be treated early. It contains questions from four different nutritional sectors like anthropometric measurements, Mid shoulder circumference, calf's perimeter and loss of weight. There are all together 18 different questions all related to diet and other energy intakes. It is calculated in total of 30 points and patients who score less than 17 points is known as likely to have malnutrition. Following table shows the reading of the MNA results.

Points scored	Results
Less than 17	Suffered from malnutrition
17 to 23.5	At risk of malnutrition
More than 24	Well-nourished

Subjective global assessment (SGA): It is another screening tools which was first introduced in 1982 in order to assess the nutritional status of patients without any measurement of body composition analysis. This tool is not only used for elderly patients but also in other medical patients like in surgical ward and oncology ward. It Is the easiest way to assess the patients as it is totally based on patient's medical history and the verbal communication with the patients. Examiner will ask the patients about the physical changes like weight loss, diet intake and take other physical examination like loss of subcutaneous fat and muscles waste.

Finally, examiner will determine whether the patient is well nourished or not based on the results. (Christensson, Unosson & Ek, 2002).

Besides these two there are other screening tools like malnutrition universal screening tools (MUST) which are in practice in order to assess the patients. Physical function is also the criteria to measure the malnutrition which are highly associated with elderly people. By using Mediterranean diet adherence score (MeDi) and diet quality index (DQI) assessing of diet quality can be measured and These measurement tools are created to meet the commitment to Finnish dietary guidelines. (Jyväkorpi, Urtamo, Pitkälä & Strandberg, 2018). These assessment tools are highly used by the nurses.

6.1.2 Dietary assessment

It simply means the measurement of the food and liquids intake by a patient in last 24 hours of period. This is done in most of the cases in order to know the supplements taken by patient. It can be done by asking the questions to the patients about their intake for a day or with a list documented about the food and liquid supplements intake. It is the easy way to know about the nutrition intake by the patients but it has its own disadvantage too as it is totally depended on what patient's memory and data can be influenced if they don't remember what they took in that particular day. (Haboubi, 2010).

6.1.3 Clinical assessment

Clinical assessment generally means the signs of lack of nutrition in a patient's body which cause the different kind of diseases. It can be done by examine the patient's whole body physically or simply by asking a questions to a patient whether or not do they have any problems in their body. Lack of different nutrients deficiency like zinc, fatty acids, vitamins, protein effects on various systems of body causing many signs and symptoms on particular system for example skin, hair, nail, eyes, mouth etc. (Haboubi, 2010).

6.2 Proper education and training

Nutritional education is essential for both medical workers and patients as well. It provides the basic nutritional status of the patients, assessment of the patients to do the screening test,

find the cause of malnutrition (if any) and how to deal with patients suffering from the malnutrition. Many programs are introduced in health centres and hospital for their medical workers. Educations can be given to both nurses and to patients as well.

6.2.1 Responsive to needs

As being a medical professional, you need to be quick to response towards the needs of the patients. When you assess the patient's nutritional status, you need to just focus on the individual and act towards the needs of individual. In this case, nurses are also supposed to meet the patient's family member and discuss more about the needs of the patients such as in food menu. But the places like elderly home, it is difficult to maintain nutritional status where there is same food for all people. Therefore, dietary measurement works out where you can do analysis of the individual people and see what components is lacking in their meals and response towards it. (Merrell, Philpin, Warring, Hobby & Gregory, 2011).

6.3 Aging in consideration

Aging is directly related with the malnutrition. Along with an increasing age, there is also possible chances of less intake of diet, high risk of weight loss, reduce body mass. Aging is also associated with the other chronic illness. Less physical activities, low metabolic rate and poor appetite are the main cause of malnutrition of elderly people. This is very important to recognize the malnutrition among elderly people and take a proper nutritional guideline. (Suominen et al., 2019). Biological and physiological changes among the elderly people are the results of malnutrition. Nurses and other medical staffs should be able to identify those changes immediately and take actions against malnutrition.

6.3.1 Biological changes

There are many biological changes that occurs during our life time. Age related illness in our body systems like digestive systems make huge difference in the nutrition status of the body. Illness like diabetes, pancreatitis and many more other diseases bring changes in gastrointestinal tract. Reduce in the secretions of gastric acids cause the increase of bacteria

in the intestine which cause the loss of body weight and reduce in intake of nutrients eventually causing malnutrition. (Haboubi, 2010).

6.3.2 Physiological changes

Malnutrition causes the changes in physiological composition of elderly people. Changes like loss of body weight, decrease in body mass index (BMI) are the signs of malnutrition among aged grouped people. Less physical activities decrease metabolic rate, lack of secretions of other hormones causes the increase in fat. There will be loss of body weight because of the insufficient diet intake. (Haboubi, 2010).

6.4 Nutritional education

Nutrition education of aged can be done better by teaching nurses and other health professionals in order to understand the dietary problems facing the aged. And by teaching aged it could also improve malnutrition in elderly. (Suominen, Kivisto & Pitkala 2007).

6.4.1 Nutritional education for nurses

Nutrition education gives nurses the knowledge about the dietary needs, physical condition, mental condition and psychological condition of the elderly people. There are different guidelines as well to the elderly people which nurses should know during their care. Some of them are aim for fitness, physical fitness, choose the variety of grains, fruits and vegetables, level of sugar and fat intakes as well as alcohol beverages and many others. (Sahyoun, 2002). One of the main objectives of the nutrition education is to provide the good knowledge regarding the nutritional problems of the aged people along with good care of them. It helps to recognize the malnutrition among aged people and tackle them as soon as possible by the enhancing patient's nutritional status. These educations give the information about the proper use of screening tools, assessment of the patients, analysis of the assessment and works on the basis of their assessment like finding out which patients need the specific nutrients. (Suominen, Kivisto & Pitkala, 2007).

The launch of new nutrition screening nurses and educating health professionals will guide to implement and to understand the nutrition needs for older people living at home. Quarterly or monthly nutrition screenings with or without clinical issues must be done.

Earlier studies show that nutrition education provide nurses and other healthcare specialists in enhancing their knowledge on nutritious necessities of aged and moreover nutritional educations helps to repress weight loss and reduced intellectual activities.

6.4.2 Nurses connection with other healthcare professionals

When there is a link between health care professionals, early identification and nutritional interventions can be enhanced. Healthcare professionals such as physicians, nutritionist, nurses and medical specialists. As a healthcare professional, the team works to document and monitor nutrition screening policies, deliver nutritional care plans, detail the progress of each plan for ease of delivery. (Söderhamn, Söderhamn 2009).

Teamwork between nurses and other health care professionals increased tests of chronic confrontational dietary tasks. There should be teamwork among nurses and practicing nurses to improve activities related to the nutritional requirements of the aged. Likewise, here must be a relation between the nurse and the therapist, which may involve eating disorders such as mood swings and challenges. In addition, swallows should also be contacted by a speech therapist to examine the swallowing challenges. Furthermore, the dietitian should not be discharged so nurses can find nutritional plans for the elderly. (Tappenden et al. (2013), Jensen et al. 2013,).

Teamwork will also help professionals to understand their roles as well as their limits. The role of dieticians is in the preparation of nutritious care plans while the nurses present care plans in a practical way. (Jefferies, Johnson & Ravens 2011).

6.5 Nutritional needs for elderly

The nutritional requirements of the elderly face several issues such as illness, drug interactions, active activity levels, and problems with chewing and swallowing into nutrition. Nutrition needs, physical composition, physical impairment, co-morbid aspects, psycho-

social issues, and intellectual issues that are also noticeable in the elderly should also be considered. (Chernoff 2003, Fuhrman 2009).

6.5.1 Individual care plan

Facing nurses in the home care sector is insufficient time and staffing status as the client relies on medical professionals because many of them are lonely and they don't have someone to share feelings with and their relatives are unable to visit normally.

A few studies suggest that nurses are mainly focused on documents and medicines than helping elderly to feed. Comparatively, some nurses recognize the requirements to help out during the mealtime, although with insufficient measures, premature infants are more prone to illness and the elderly. (Lahmann, Tannen & Suhr 2015, Merrell et al. (2012)

Depend on nutritional care as eating is one of the important elements in nutrition and malnourished. Craving stimulants for instance healthy eating, nutritious interactions and proper managing of pain, nutrition and weight loss have been found to be productive ways. Obtain the required information concerning persons nutritional requirements and follow nutritional instructions for the elderly. It has proven to be a good involvement as it makes the patient to take part in nutritional care that will enhance the patient's diet and consumption of energy. Access to the individualized care plan is tailored to the eating and dining timetable. One of the main challenges in this regard is refusing to care for the client or failing to check on a health professional. (Eide, Halvorsen & Almendingen 2015).

6.5.2 Required energy and nutrients

By knowing aging is a contributing factor in nutritional requirements, nurses can improve health promotion and nutritional needs. Further, the energy and nutritional requirements of the aged are ascertained by considering the person's body and academic position in relation to social, cultural, economic, and religious aspects.

The total decline in the protein in the body indicates to a decrease in the energy requirements that affect metabolic mass work. Low physical activity due to imbalance or osteoporosis can be associated with joint and bone diseases, failure of heart, brain diseases or poor eyesight. The lack of satisfaction of the aged is established as they experience aroma and taste abilities

that reduce the amount of nutrients. Multivitamins, which act as an extra diet, increase the vitamin levels of the elderly living at home and reduce health problems by reducing heart failure and promoting the immune system in the elderly as well. It is necessary that nurses talk to the aged on energy, nutrients and liquid intake to discover any problems that may arise on nutritious interventions. Common problems, for example sickness and temperature, are the reasons of dehydration in aged living at home. Medical symptoms are insufficient to identify dehydration in the aged so regular liquid intake can be used. (Stechmiller, Arnp 2003).

According to (RDA) the suggested everyday consumption of the protein is 0.8 g / kg for individuals 51 years and beyond. The increase of protein necessities in the aged can be associated to lean muscle mass, thus certain nitrogen balance can be measured in the aged. Calories less than 1500 kcal / day causes to deficiencies of minerals and vitamins and there is a continuous decrease in calcium intake related to the elderly experience. Reduced calcium absorption is linked to osteoporosis. The National Institutes of Health promotes that people 65 years of age or older should use 1500 mg of calcium. Everyday requirement for Vitamin D is 600IU for seniors over the age of 70. The recommended everyday requirements of vitamin A is suitable in the aged as liver store vitamin A increases with age.

Study indicates that low number of any B vitamins is related with hyperhomocystemia and is at risk of cardiovascular disease. In addition, 400 to 800 IU range of daily consumption of vitamin E and reduces level of not deadly myocardial infarction in the elderly with ischemic cardiac disease. According to authentications that the use of folic acid might be reduce the amount of hormone cysteine in the blood, reducing the risk of coronary artery disease. Monitoring of potassium levels prevents the effects of hypoglycemia. Zinc consumption on everyday basis is 100mg needed. Insufficient zinc intake slows down wound healing, alters immune system function, and tastes sensitive. (Fuhrman 2009, Stechmiller, Arnp 2003).

7. Discussion

We have divided discussion in two different part as finding discussion and method discussion. In finding discussion, we have presented our results which are from the articles whereas in method discussion, we have explained the working method behind our findings.

7.1 Finding discussion

The nurses are poor at recognizing malnutrition in their elderly patients because its causes are multifactorial and lacking proper education also plays part in this. The nurses play important role in identifying patients that are at risk of malnutrition. Moreover, nurses also take into consideration precautions related to the reasons of the malnutrition. However, the perspective of nurses is positive and negative regarding to the elderly. Earlier studies show that nurses are supposed to be responsible for nutritional evaluation and care in the elderly unit but due to lack of knowledge and backing from the doctors, nurses are unable to do so. The Swedish counsel puts light on that registered nurses and the physicians are responsible for the evaluation of the nutritional level and the nurses are also playing these roles; ordering, serving, observing nutrition and supply of food. This responsibility needs appropriate knowledge and suitable tools to evaluate and identify the malnutrition in elderly. (BachrachLindströ et al. 2007a).

Malnutrition depends on the physical and biological changes of an individual so there is not any fixed way to find out or to treat it. It depends on person to person as body mass, body system and energy intake is also varying from person to person. It is nurses responsibility to step up and take a right move in a right time for a right person. It is well known that there are lots of factors that are affecting the nutritional status of the elderly people. There are also lots of way to find nutrition level too. Trainings and educational programs are very much helpful for the medical professional in order to deal with the nutritional situations of the patients on daily basis. Uses of proper screening tools help them to detect whether or not the patients have malnutrition. Proper assessment and observation is the key to recognize the changes in elderly people. There is a whole nursing process in treating malnutrition. As explained in Orem's theory, there should be proper care plan to the patients. Educations and training to staff is essential so they can deliver best possible treatment that can be given to individuals and motivate patients so they can be independent. There are many factors which can lead elderly people to malnutrition. This is explained in background as well as findings also clearly shows that factors like physiological and biological changes are key to malnutrition.

7.2 Method discussion

A systematic literature review is used to examine the issue and give a feasible solution to malnourished elderly living in different settings. The findings of this research were based on previous studies. A qualitative inductive analysis was used in this research. This method was chosen because it allows the author to explore the content at hand deeply. This method was appropriate and valid to conclude and evaluate the current literature. We used qualitative data analysis because author desired to collect, analyse, investigate, understand and then evaluate that how nurses can recognize and tackle the malnutrition in elderly. Author tried to conclude the study as simple as possible to clearly understand the findings. All ethical considerations were considered throughout the data analysis process. (Reid 2009)

There are two ways to analyse qualitative content analysis which are inductive and deductive. We have used Inductive way to analyse the collected data and it consisted of three main stages: Preparation, organization and reporting of findings. In first stage, author collected the relevant data to his research. In the organization stage, author organized the data to create categories and concepts. In the final stage, author reports the results by describing the content of the categories explaining the research questions themes.

7.2.1 Trustworthiness

In this chapter, author tries to find out the reliability or validity of the study by basing it on the criteria of trustworthiness. The trustworthiness criteria is proposed to evaluate the credibility, dependability, comfortability and transferability of qualitative study.

Credibility is described as it “*deals with the focus of research*” and “*refers to the confidence in how well the data address the intended focus.*” (Elo, Kääriänen, kanste, Pölkki, Utrianen & Kangäs, 2014). Credibility is about how sure is the researcher about the truth of study’s findings. Author has done his best in order to present data in best way possible while keeping in mind the credibility.

Dependability being second component of trustworthiness is described as a study that is consistent and could be repeated by other researchers. In other words, if someone wants to do research on similar topic, person would be able to have enough information to replicate the study and to get the same results as in your study. (Elo, Kääriänen, kanste, Pölkki,

Utrianen & Kangäs, 2014). Author finds this study to be compatible and could be found in other studies with similar context.

The third component is comfortability described as the data of findings is represented as it is without any biased decisions or personal influences. (Elo, Kääriäinen, Kanste, Pölkki, Utrianen & Kangäs, 2014). Author has presented the results truthfully without any personal interest or motivation.

Final component is transferability, explained as “the *extent to which findings can be transferred to or have applicability in other settings or groups.*” (Polit & Beck, 2017). According to author, the findings of this study are transferable and can be applicable to other studies with similar context.

Author has maintained the criteria of trustworthiness to the best of his knowledge in this study.

8. Conclusion

As a conclusion, we would like to say that our main aim of choosing this research is learn more about the nurses' role in recognize the malnutrition and how they tackle the situations. Study suggest that there are many possible causes and the factors that can cause the nutritional deficiency among the aged group. With a proper education and nutritional training along with a help of various screening tools, nurses are able to identify the nutritional status of the elderly people and take a possible intervention. The highly used and appropriate tool for measuring malnutrition is mini nutritional assessment tool (MNA) which is used by nurses now a days. The Orem's nursing theory can be viewed as baseline for nurses in order to care for elderly suffering from malnutrition.

Here are some recommendations suggested which are

Nurses should check the nutritional level of every patient on the time of admission and report this process after certain interval.

Nurses should also give equal importance to the patient's diet plan as given in the cases of medication.

Nurses should also take into consideration the adverse effects of medication so they can better understand the patient's situation.

By adding some additional courses regarding nutrition in study plan can also help nursing students later when they go out in field.

Time to time nurses should be updated on their knowledge regarding neutrinos.

Even though there are many factors which contribute to malnutritional but still person need to be aware about nutrional need of their body.

9. Limitations

Findings of our study is based on a qualitative literature review, but we have also used one results of a study where both qualitative and quantitative method was applied.

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Appendices 1. List of articles used for study

Author & Journal	Name of study	Aim	Research Method	Result

Haboubi, N. (2010) Clinical intervention in aging.	Assessment and management of nutrition in older people and its importance to health.	To understand the physical, biological and physiological changes and its effect in nutrition.	Qualitative method analysis.	Aging is the factor in declining physical functions which leads to different changes in body as well as the causes like depression, medications are also the factors of malnutrition.
Merrel, J. et al (2012) Health and Social care in the community.	Addressing the nutritional need of older people in residential care homes.	To find out the causes which influence the nutritional value to elderly people.	Ethnography qualitative study.	Person-centered care is applied in order to provide the nutritional care as well as working as a team with the elderly people and their families.
Sahyoun, N. R. (2002). Journal of nutrition education and behaviour.	Nutrition education for the healthy elderly population: isn't it time?	To analysis the nutrition policies and the dietary needs of elderly people.	Report study.	it suggest that, as the program which are used to create awareness regarding nutritional

				needs are falling behind, its today's demand to update those programs.
Suominen, M. H. (2007). European Journal of Clinical Nutrition, 63(2), p. 292.	How well do nurses recognize malnutrition in elderly patients?	To study how well nurses can recognize malnutrition among elderly people in long-term care hospitals.	Data analysis and structured questionnaire.	Nurses consider 15.2% of patients as malnourished but MNA shows 56.7% were malnourished. Nurses were very poor to recognize their patients have malnutrition or not. Nurses are very much need of nutrition education.

<p>Suominen, M. (2004). The journal of nutrition, health and aging, 18(10), pp. 861-867.</p>	<p>Nutritional guidelines for older people in Finland.</p>	<p>To find out what elderly people needs and to guide them with their nutrition.</p>	<p>Literature review.</p>	<p>Five nutritional guidelines were mentioned i.e.</p> <ol style="list-style-type: none"> 1. Nutritional needs should be considered. 2. Nutritional status and food intake should be assessed regularly. 3. Adequate intake of energy, protein, fiber and other essential nutrition should be guaranteed. 4. Vitamin D supplement recommended. 5. Importance of physical activity is highlighted.
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<p>Drahosova, L., Jarosova, D. (2016). Central European Journal for Nursing and Midwifery,7(2),453-460</p>	<p>Concept caring in nursing. 90</p>	<p>To focus on the concept of caring in Nursing and to synthesize knowledge that concerns the definition of concept of caring in nursing from the point of view of nurses and patients.</p>	<p>Qualitative Analysis</p>	<p>Result shows that the concept of caring is characterized by the professional knowledge, skills, personal maturity and interpersonal sensitivity of nurses which results in meeting all the needs of patients.</p>
<p>Eide, H.D et al Journal of Clinical Nursing, 2015</p>	<p>Barriers to nutritional care for undernourished older people.</p>	<p>To find obstacles faced by nurses in giving care to malnutrition patients.</p>	<p>Qualitative method</p>	<p>Five themes were identified which put light on obstacles experienced by nurses in giving care.</p>

<p>Stechmiller, J.K. Journal of Infusion Nursing, 2003</p>	<p>Early Nutritional Screening of Older Adults: Review of Nu- tritional Support</p>	<p>Health care provider face difficulties in assessing malnutrition in elderly. The aim of the study to help them start early assessment and devise plans to minimise malnutrition.</p>	<p>Qualitative method</p>	<p>Nurses perform regular assessment of nutritional status with help of screening tool (MNA) in older patients to detect malnutrition. Smooth detection of malnutrition will improve nutritional care and increase clinical outcomes.</p>
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<p>Jefferies et al Journal of Clinical Nurs-ing, 2011</p>	<p>Nurturing and nourishing: the nurses' role in nutritional care</p>	<p>Researchers joined forces with health professionals in order to devise a policy explaining nurses role in improving nutritional care of their patients.</p>	<p>Qualitative method</p>	<p>Themes were made and then turned into standards which later helped nurses in improving oral nutrition of their patients and appointing separate nurses which will keep an eye on nutritional status and help implement the policy.</p>
<p>Tappenden et al American society of par-ental and enteral nutri-tion, 2013</p>	<p>Critical role of nutrition in improving quality of care: an interdisciplinary call to action to address adult hospital mal- nutrition</p>	<p>The article calls for need of interdisciplinary health professionals to work together in revealing importance of nutrition intervention and come up with practices which later help them to detect those patient who are</p>	<p>Qualitative Method</p>	<p>Interdisciplinary collaboration between health professionals is very important in order to devise practices which will help them to diagnose and treat malnutrition in early stages and cost effectively.</p>

		at risk of malnutrition.		
European journal of clinical nutrition (2007).	The effect of nutrition education on professionals' practice and on the nutrition of aged residents in dementia wards.	To provide the nutritional education to nurses and its evaluation.	Qualitative and quantitative study.	Results shows that after the education it was easier for health providers to answer the needs of patients and thus reducing problems related to nutrition.