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RESEARCH ARTICLE

WHAT INTERVENTIONS ARE EFFECTIVE FOR MANAGING MALNUTRITION IN PEOPLE WITH DEMENTIA?

Shahzaib Ahmed, Shahzaib Ahmad and Muhammad Abubakar Shahid Chishti
King Edward Medical University, Pakistan.

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Abstract

Introduction: The aim and objectives of this systematic research and analysis of the literature are to evaluate the effectiveness of malnutrition interventions that are presently offered for dementia patients and to identify the currently known direct and indirect interventions to manage malnutrition in people with dementia. Dementia can be defined as the loss of cognitive functioning, remembering, thinking, and behavioural abilities to such an extent that it beginsto interfere with the routine activities of a person. The functions that can be impaired include memory, visual perception, language skills, self-management, problem-solving, and the ability to focus and pay attention. Malnutrition among dementia patients is an important issue. In general, weight loss associated with malnutrition often precedes the onset of dementia and then increases in pace with the progression of the disease. Some people with dementia cannot control their emotions, and their personalities may change. Moreover, this research also evaluates the effectiveness of interventions for managing malnutrition in people with dementia.Research question: what are the common interventions used for treating malnutrition among dementia patients.What are the currently known direct and indirect interventions to manage malnutrition in people with dementia? What is the effectiveness of interventions for managing malnutrition in people with dementia?

Methods: In this research, we will use thematic analysis to find out themes from research papers on interventions related to malnutrition of dementia patients. This study has a clear aim to identify the effectiveness of malnutrition interventions that are presently offered for dementia patients. In this research, we will use the strategy of content analysis. For doing content analysis, we have selected 10 recent pieces of research. All selected researches are on the theme of interventions for treating malnutrition among dementia patients.

Results: Findings revealed that family support, music, educational training, and supplement are widely used for the treatment of malnutrition in patients of dementia. The study also revealed that currently, the most effective and frequently used treatment for the malnutrition in people with dementia is the use of supplements. In the end, this study also shed light on the effectiveness of all availabletreatments of dementia. Findings revealed that all these

Corresponding Author:- Shahzaib Ahmed
Address:- King Edward Medical University, Pakistan.

strategies are widely used with dementia patients for managing the issue ofmalnutrition among them. This literature review is the first systematic and quantitative overview discussing the effects of malnutrition in people with dementia and the interventions that can be taken in this regard to compensate for malnutrition in these people. This research has a strong implication in the field of medical science.

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Introduction:-

Dementia:

Dementia is a chronic condition that can be categorized by a variety of behavioural and cognitive indications including troubling communication, difficulty in retaining, personality change, and decreased ability to perform daily life activities (National Institute for Health and Care Excellence (NICE), 2018). Dementia is present in around 47 million individuals throughout the world (NICE, 2018), and its occurrence in people age 60 years and above 60 years is 5% to 7% (Prince et al., 2013). The frequency of dementia symptoms is directly proportional to the age of individuals, which means as people get old, they have more frequent episodes of symptoms related to dementia. However, a lower risk of dementia is associated with young ones (Elia, 2015). Alzheimer's, a subordinate disease of dementia, is around 62% of all the cases, vascular dementia accounts for around 17%, and 10% accounts for mixed dementia of all cases (Abdelhamid et al., 2016). At the same time, frontotemporal and Lewy bodies are further subtypes of dementia (Volkert et al. 2015).

Mild dementia is usually identified when a person transits to cognitive impairment and memory loss at larger from a relative state of asymptomatic disorientation (Prince et al., 2014). Moving towards moderate dementia, it is presented with the patients having problems in carrying daily routine activities, especially eating behaviour; while last or chronic stage of dementia is described by the difficulty in communication, and complete dependence on others for basic care activities (Volkert et al. 2015).

Context of dementia in the UK

Around 815,000 people in the UK are being diagnosed with dementia that accounts for 1.3% of the entire population of the UK, and there is a significant chance of an increase in this number by 2025 (NICE, 2018). The UK is estimated to spend £26.3 billion annually for the interventions and awareness of dementia (Prince et al., 2014). But still, the availability of care homes is estimated to be only 69% of the total population facing dementia (Prince et al., 2014).

Malnutrition in people with dementia

Malnutrition, at large, is defined as the deficiency or toxicity of some specific or all nutrients essential to the human body for normal functioning (NICE, 2006). These nutrients include proteins, carbohydrates, fats, vitamins, minerals, and some trace elements. An individual is said to be malnourished when there are measurable changes in the structure or functioning of the body. Usually, individuals with dementia are affected by malnutrition associated with a higher risk of pressure ulcers, frailty, and sarcopenia, urinary tract infections, and chest infections (NICE 2018). Good nutrition support services are essential for patients of dementia. Nutrition support is usually provided as a part of treating the main cause of malnutrition to prevent further comorbidities (Jones, 2019).

Prevalence of dementia and malnutrition in the UK

It is estimated that individuals above the age of 65 years (1.3 million people of the total population) are malnourished, and they usually live in communities while 35% of the people who reside at care homes are malnourished (Corrada et al., 2010). The data reports that people older than 65 years of age with or without dementia contribute significantly to the cost of malnutrition funds collected from the public for healthcare and social services in England (Elia, 2015). It is projected that there is a 15% disbursement of this total public fund reserved for health and social purposes on issues related to malnutrition (Elia, 2015). And around half of this is spent on older people with dementia and associated malnutrition (Elia, 2015).

Risk factors associated with malnutrition in individuals suffering from dementia:
Individuals with dementia are frequently observed having milder to strong symptoms of mental and behavioural troubles like inadequate consumption of diet and liquid (Herke et al., 2018). This is one of the reasons that dementia patients have pertinent chances of getting malnourished, dehydrated, and lean at any phase of this condition (Herke et al., 2018). If left unattended, diet and nutrition inadequacy can cause serious complications, and the chances of these complications increase as dementia advances (Jesus et al., 2012). There are over ten folds more chances of hospital urgency in older people with dementia than older people without dementia (Bernardes, Massano, & Freitas, 2018). It may be because of the further development of dementia that may elevate the danger of fluid inadequacy, respiratory infections, accidents, compromised diet, fluid loss due to production of diluted urine, memory loss, dysphagia, and insufficiently trained staff (Feehally, & Khosravi, 2015).

Along with malnutrition, mobility issues and psychologically disturbed social life make dementia even worse for the patient as well as the relatives and staff (Jones, 2019). Sanders et al. (2016) reported severe conditions of people with prominent dementia related to nutritional health in one of their studies in the United States. Curing these complications was among the most intended efforts by dementia patients, their families, and caregivers (Herke et al., 2018). Therefore, it becomes essential to call for effective interventions for malnutrition that can contribute to help medical specialists in the treatment and relax the lives of dementia patients as well.

Direct interventions may call as primary interventions, deal merely with the patient's food and water intake, swallowing passage, supplementation or meal replacements, and provision of social support (Abdelhamid et al., 2016). While indirect or secondary interventions contribute by modifying dining style, awareness about the condition, organization of the day, physical activities, and other combinations of interventions (Abdelhamid et al., 2016).

According to Wilson (2013), malnutrition, if not diagnosed, overlooked, or not treated properly, is as same as a skeleton in the hospital's closet. Malnutrition is said to have damaged at the cellular, psychological, and physical levels. These damages depend on several reasons like gender, age, duration of illness, and recent Nutritionals. Malnutrition reduces the ability of the immune system against infections causing several complications in the treatment (Kim and Lee, 2013). It also increases the duration of hospital stays. The duration of hospital admission is usually longer for the patients who have some level of malnutrition in addition to the presenting complaint as compared to those who are admitted and cleared well-nourished (Champion, 2011). Malnutrition person is more dependent on others, increases the requirement of nursing care, and longer stays at hospitals (Kim and Lee, 2013).

Aims and Objectives:-

The aim and objectives of this systematic research and analysis of the literature are:

To evaluate the effectiveness of malnutrition interventions that are presently offered for dementia patients

To identify the currently known direct and indirect interventions to manage malnutrition in people with dementia.

To evaluate the effectiveness of interventions for managing malnutrition in people with dementia.

Rationale for literature review:
A greater vulnerability of people with dementia to malnutrition is well known. Additionally, the chances of comorbidities associated with malnutrition in people with dementia are also high, which increases the cost of treatment significantly. Therefore, it is extremely important to seek interventions that are effective for managing malnutrition in people suffering from dementia. The implications of the resulting study could be extended to help design effective policy and affordable healthcare costs (Horgusluoglu, Xiao, Wang, Wang, Zhou & Nho, 2020).

As mentioned in the previous sections, there are more than ten folds chances of hospital urgency in older people who are suffering from dementia than those without dementia. The causes of these hospital emergencies are usually secondary to the fluid inadequacy, compromised diet, and insufficiently trained staff (Andriani,2019). If these causes are prevented effectively, the quality of life for individuals suffering from dementia could be improved to some extent. Examination of the present interventions to avoid these primary causes is important to design novel interventions. Therefore, this dissertation systematically identifies and evaluates the effectiveness of the interventions presently offered to manage malnutrition in people with dementia.

Methodology:-

Search strategy:

This study has a clear aim to identify the effectiveness of malnutrition interventions that are presently offered for dementia patients. In this research, we will use the strategy of content analysis. For doing content analysis, we have selected 10 recent pieces of research. All selected researches are on the theme of interventions for treating malnutrition among dementia patients. For getting higher approach in searching, we used the PICO framework as a search strategy.

Population	Old age people
Intervention	Interventions for treating malnutrition's among dementia patients
Comparison	No intervention
Outcome	Music, family support, educational training and supplements are widely used treatments for malnutrition's among dementia population

Study selection:

This study is qualitative research in which we will use a thematic analysis research design to evaluate the impact of malnutrition's on dementia patients.

Boolean logic:

Boolean logic is a search strategy which we used to perform keyword researches. In this strategy Bolean operations 'AND' and 'OR' are used to limit search results. Each command leaves an effect on search and browsing. "OR" command allowed search engine to find similar content. And the command of "AND" restrict search engine to certain keywords.

Keyword P		Keyword I		Keyword C		Keyword O
Old age		Music				Recovery rate
or		Or				Or
Patients of dementia	AND	Meal Time	AND		AND	Supplements
Or		Or				Or
Out Patients		Supplements				Nutrition's
Or		Or				Or
Indoor patients		Proteins Intake				Exercise
Or		Or				Or
Older adults		Dining Environment				Vitamins intake
Or		Or				Or
In-service patients		Manipulation of colours				Family Support

Strength and limitations of search strategies:

This research is using a thematic analysis approach. Thematic analysis is a scientific analysis that derived themes from content by using a systematic approach.

Inclusion and exclusion criteria:

Inclusion	Exclusion	Rationale
Interventions for malnutrition's	Interventions for overall dementia	To find a frequently used method for

		treating malnutrition.
Research papers related to only dementia	No other memory disorders will be included	To be specific with the dementia
Researches from 2000 to 2020 will be included	Researches before 2000 will be excluded.	For getting the latest responses.

Number of papers selected:
We have selected ten recent pieces of research on the themes of malnutrition among dementia people.

Framework for the selection of papers:
We have selected these researches by using the database of Google scholar. The basic concern while searching these researches was to selected researches which were published after 2000.

Table 1:- Selected papers.

SR.NO	Citations	Research paper title	Year of publication
1	McHugh, L., Gardstrom, S., Hiller, J., Brewer, M., & Diestelkamp, W. S. (2012).	The effect of pre-meal, vocal re-creative music therapy on nutritional intake of residents with Alzheimer's disease and related dementias: A pilot study.	2012
2	Hammar, L. M., Williams, C., Swall, A., & Engström, G. (2012).	Humming as a means of communicating during mealtime situations: A single case study involving a woman with severe dementia and her caregiver.	2012
3	Chang, C. C. (2005).	EFFECTS OF A FEEDING SKILLS TRAINING PROGRAM ON KNOWLEDGE, ATTITUDE, PERCEIVED BEHAVIOR CONTROL, INTENTION, AND BEHAVIOR OF FORMAL CAREGIVERS TOWARD FEEDING DEMENTIA PATIENT IN TAIWAN NURSING HOMES	2005
4	Dröes, R. M., Breebaart, E., Ettema, T. P., Van Tilburg, W., & Mellenbergh, G. J. (2000).	Effect of integrated family support versus daycare only on behaviour and mood of patients with dementia. International psychogeriatrics, 12(1), 99-115.	2000
5	Allen, V. J., Methven, L., & Gosney, M. A. (2013).	Use of complete nutritional supplements in older adults with dementia: systematic review and meta-analysis of clinical outcomes. Clinical nutrition, 32(6), 950-957.	2013
6	Hanson, L. C., Ersek, M., Gilliam, R., & Carey, T. S. (2011).	Oral feeding options for people with dementia: a systematic review. Journal of the American Geriatrics Society, 59(3), 463-472.	2011
7	Nilsson, K., Gustafson, L., & Hultberg, B. (2001).	Improvement of cognitive functions after cobalamin/folate supplementation in elderly patients with dementia and elevated plasma homocysteine. International journal of geriatric psychiatry, 16(6), 609-614.	2001
8	Wells, J. L., & Dumbrell, A. C. (2006).	Nutrition and ageing: assessment and treatment of compromised nutritional status in frail elderly patients. Clinical interventions in ageing, 1(1), 67.	2006
9	Gold, C., Eickholt, J., Assmus, J., Stige, B.,	Music Interventions for Dementia and Depression in ELderly care (MIDDEL):	2019

	Wake, J. D., Baker, F. A., ... & Ridder, H. M. O. (2019).	protocol and statistical analysis plan for a multinational cluster-randomised trial.	
10	Salcher-Konrad, M., Naci, H., McDaid, D., Alladi, S., Oliveira, D., Fry, A., ... & Lopez-Ortega, M. (2019).	Effectiveness of interventions for dementia in low-and middle-income countries: protocol for a systematic review, pairwise and network meta-analysis.	2019

Results:-

This research aims to do a literature review on previous researchers, which explores malnutrition interventions for dementia patients. Dementia is addressed as a very vague term that is used to indicate a person with memory loss and certain behavioral changes. It is far broader then forgetfulness and absent-mindedness. It is used to refer to old age when the ognitive abilities of a person starts decreasing.Memory loss alone cannot be used as a criterion for the diagnosis of Dementia.There must be further interruptions of brain function. There are a number of changes that take place in individuals suffering from dementia. In severe forms, it becomes very difficult to perform even the simple daily tasks, such as dressing or bathing. Dementia can be caused bya stroke, a car accident or some other underlying disease.

Some types of repetitive traumatic brain injury - such as received by sports players - have been linked to certain dementias. Diseases such as Prion diseases or certain other forms protein defects, as in CJD (Creutzfeldt-Jakob disease) and GSS (Gerstmann-Straussler-Scheinker syndrome) can also be a cause. HIV infection - when the problem is simply termed HIV-associated dementia. Creutzfeldt-Jakob disease (CJD) is a rare, degenerative and fatal brain disorder. It affects about one person in every one million people per year worldwide. CJD usually appears in later life and runs a rapid course. Symptoms included in the early stages of the disease are failing memory, certain behavioural changes, visual disturbances and lack of coordination. Its objective is to identify the currently known direct and indirect interventions to manage malnutrition in people with dementia.

Malnutrition:

The extent of dementia in many people is less or somehow moderate. The relationship of malnutrition is with dysphagia, incremented levels of hospitals, insomnia, immobility, delusions, incontinence, and hallucinations. The risk of this malnutrition is related to the level of fluid, which is less than 1100ml taken inside daily. Confusion and loss of memory are two common symptoms of dementia. According to Wells, & Dumbrell, 2006, malnutrition is also one of its side effects. While weight loss is a common occurrence as people get old. Many elderly people undergo a substantial loss of weight and lack of nutrition due to the complications that arise from the disease of dementia.

Growing complications:

According to the report, many undernourished elderly people may find themselves increasingly less mobile, frail, and extra susceptible to falling.

Additionally, they may experience an exacerbation of current health conditions. Yet, despite the importance of a healthy diet, many seniors struggle to get their required nutrition due to a variety of potential issues, among them problems swallowing, mental or neurological diseases, side effects of certain medications, or social and economic factors. People may be able to reduce the risk of developing dementia with the proper diet early on in life, according to the report. However, once people develop the condition, the disease only makes it more difficult to maintain healthy eating habits. Loss of motor function and cognitive impairment may make it difficult for someone with dementia to find and prepare food. The situation is only worsened by the potential loss of taste or smell, making food less appetizing.

Impacts of Malnutrition in Elder People:

Malnourishment is the result of the above-described symptoms. The new various researches stated that approximately 20 per cent of elderly people whose ages are above sixty years old would surely have the disease of dementia. Thus, the main point is to have awareness about the malnourishment also with dementia in elderly people.

The main symptoms of malnourishment and this disease in the aged person is to have depression and anxiety(Salcher-Konrad et al., 2019& Gauthier, 2018).

Major Factors of Malnutrition:

Malnutrition is the result of various factors; therefore, in elderly people, the prevention of malnourishment is possible by controlling those factors. The key factor is the appetite loss in the people. They are also the side effects of taking so many medicines, swallowing difficulty, less exercise, and eating unhygienic foods. The side effects are in the type of appetite loss etc. This issue of appetite loss can also be resolved by the daily exercise to go for a walk daily. To swallow the food to the patient, the caregiver should help the patient and give touches to his throat while eating something. Try to cook the favourite food of the patient so that he wants to eat as the patient is facing the issue of loss of appetite, and he doesn't want to eat something (Dorothee Volkert a, 2015).

Senses, Malnutrition, and Dementia:

The loss of senses in the disease of dementia is the major factor which is to be considered. This problem can ultimately result in the miscalculation of the temperature, taste loss, and smell loss. The extreme level of burns is the result of the miscalculation of the temperature. So, the necessary point is to check the temperature of food before giving it to the patient (Herke et al., 2018).

The inducement of a person to eat something is reduced too much extent after the loss in his taste and smell. Malnourishment is caused by appetite loss, which is caused by eating tasteless food after losing the sense of taste. This is the most important challenge for the caregivers to deal with it as they don't know the reason for the appetite loss (Herke et al., 2018).

Risk Factors Related to Malnutrition in Elder People:

It is concluded that the people who are the patient of dementia also have malnutrition as they don't want to eat anything, appetite loss, and feel no taste of food. For solving the related problems in the patients is to give them proper nutrition after the discussion to the senior doctor.

The various factors can result in the loss of appetite; by knowing the reason and causes behind this, senior caregiver can advise fellow caregivers to increase the appetite. In every one, life nutrition is very significant. Therefore, to increase the appetite is essential for dementia patients so that they don't suffer malnutrition (Koyama, 2016)**.**

Effective Interventions For the Management of Malnutrition:

Support of Family:

There is an important role of the family support to reduce the patients of dementia because there is a requirement of care of those people who have dementia. Caregivers from the family or without family are provided to most people who are the patient of dementia. The life of dementia patients would not be much satisfied and good without the involvement of the caregivers in their lives. Also, there would be the need for care of any institution sooner, and in the advancement of the tidal waves demographically, the economy of any nation would be decreased. There are huge chances of spreading the disease of Alzheimer's and some other types of dementia to the other members of the family. Various emotions, for example, fear, sadness, anger, and frustration, can be triggered in the process of diagnosis. Many different decisions have been taken regarding the treatment, arrangements of living, care of end-of-life, care, and finances. The conflicts of the family members are very common in the result of the above discussion (Dröes et al., 2000).

The history of different relations, challenges, and cooperation vary with the families, and it also has a great effect on how the family members cooperate to help and support the patients and how the patients will respond after the diagnosis of the disease. There should be some strategies for the promotion of the involvement of people to minimize the different conflicts of family. To adjust to the diagnosis of Alzheimer's is a continuous process. The reaction of each people would be different after the diagnosis. All the members of the family should support the patients. The relaxation and comfort of the patients can be increased with the help of the family members. The important point is to stay in contact with the patients even though they are unable to talk due to illness. All the members of the family should help each other to tackle the patient. Run a job, prepare the food, and facilitate a ride. The family members should be invited to all the activities of leisure and pleasure (Dröes et al., 2000).

Vitamins and Supplements:
Mostly, ageing bodies tend to have less of these vitamins available in the body, and supplementation can help restore the body to healthy levels. However, anyone considering adding vitamin or mineral supplements to their daily routine should first discuss it with their healthcare provider to ensure that there are no potential interactions with health conditions or other medications. Nine of the vitamins that were found best for dementia patients are as follows. The prevention of the disease of dementia in ageing patients is done by the following vitamins and supplements, which are predominant in the diet (Allen, Methven, & Gosney, 2013).

Vitamin B1:
For the treatment of dementia, the dose of 50mg vitamin B1 regularly is effective. In the domain of brain, nerve transmissions are due to neurons of cholinergic, and the disease of Alzheimer's is also treated by them. This vitamin helps while in supporting the specific enzymes and the neurons of cholinergic, so the disease is treated with the help of this vitamin (Allen, Methven, & Gosney, 2013).

Vitamin E:
The purpose of the supplements, which are antioxidants, for example, vitamin E, is not only to minimize the effect of dementia.

The development of dementia can also be stopped in young people with this vitamin. The improvement of the function of the brain is good in young people who have the largest amount of vitamin E in their blood. According to Allen, Methven, & Gosney, 2013, the dose of vitamin E is 300 to 800 IU regularly is recommended, as well as Coenzyme Q10, which is an antioxidant. The delivery of oxygen is improved to the brain by this vitamin.

Phosphatidylserine:
The pronunciation of this vitamin is not only big, but the treatment of symptoms of dementia disease is also possible in a good way with the help of this vitamin. In the part of the brain, the compound, which is naturally occurring known as phosphatidylserine, is used to increase the number of different chemicals to process the functions of the brain and to keep the memories in the brain (Hanson, Ersek, Gilliam, & Carey,2011).

Folic Acid and Vitamin B12:
The amount of these two vitamins is always less in the patients with dementia and Alzheimer's. These vitamins are used to lessen the amount of amino acid. The recommended dose of vitamin B12 is 100 to 1,000 mcg, and of folic acid is 300 to 1,000 mcg daily (Nilsson, Gustafson, & Hultberg, 2001).

Zinc:
The deficiency of zinc is mostly in the population, which is elder, is greater. The dose of zinc, which is recommended, is to take 30 mg to 30 mg daily, and it helps in the improvement of the functions of the brain in the people who have dementia (Hanson, Ersek, Gilliam, & Carey, 2011).

Music for Dementia:
There are several studies that have proved that for dementia patients, the effect of music is very striking; this plays its role lie a medicine (Assmus et al., 2019, McHugh et al., 2012 &Hammar et al., 2012). There is a noticeable change or improvement in the behaviour of patients of Alzheimer's, e.g., decrease in fatigue, talkativeness, eye contact, and an increase in happiness while listening to music for 20 minutes. For the patients of dementia or Alzheimer's, regular playing of music is very beneficial, and in medical term, it is called music therapy. There are strong theories of the science behind the benefits of music on dementia or Alzheimer patients. At the same time, many parts of the brain can be stimulated through music, especially the senses like touch, sound, sight, and hearing, along with the areas of movement, mood, and language (Ronald Devere, 2017).The following are some ways of music that are used for patients of dementia and Alzheimer's.

Break in behaviour repetition:
The repetition in the behaviours of dementia patients can be broken through the music; with the help of their favourite tune, their repetitive behaviour can be avoided, for example, repeating the same activity or motion again and again and asking the same question over and over (McDermot, 2014).

Help through communication:
With the patient suffering in dementia who have lost the ability to speak, the way of communication can be music. For example, while listening to their favourite playlist, patients of dementia may tap in rhythm, nod, or clap with the music. With the help of this, they can join their social activities and can be able to express themselves(Moreira, 2018).

Nighttime Routine:
In bedtime routines, the serene atmosphere can be created, and downing behaviour like anger or anxiety can be reduced, and also the calm environment can be created through calm and soft music (McDermot, 2014).

Stimulating activity:
For dementia patients, exercise sessions and music therapy are very useful to stay focused and to increase the good consequences. It has proved that when a person is singing or listening to his favourite playlist at the time of exercise or other activity, then this keeps the patient engaged in exercise or activities (Pedersen et al., 2017).

Discussion:-

The aim of this research was to identify the approaches of intervention for malnutrition among the patient of dementia. Dementia is a memory disorder that is most prevalent among old age people. People with dementia have multiple symptoms. Some symptoms are behavioural, and some are related to the emotional state of mind. It was a qualitative study in which we find themes from previous researches on the intervention of malnutrition.

The first theme in the findings was family support. People with dementia experience a constant state of confusion due to their habit of forgetting. In such cases, they need immense support from their peer group to cope with this disorder. But in most cases, the family of dementia patients is cold, not able to understand the actual mindset and emotional state of a dementia patient. They can provide food and medication to the patients, but they do not adopt the basic understanding of their mental state. “Care for dementia ideally starts with early diagnosis, which allows for the optimal management of symptoms, as well as the identification of physical, behavioural and psychological symptoms,” Pot says, adding: “These symptoms need to be monitored over the years – and some of them can be treated. "In many low- and middle-income countries, long-term care for people with dementia relies solely on families. That's why it's vital to provide family care with information about dementia and to train them in caregiving skills," she says. So family played an important role in the management of eating habits of dementia patients (Rote, S., Angel, J., & Hinton, L., 2019).

The second theme drive from findings was the use of supplements.Research has proven that high doses of individual vitamins, including vitamin B, vitamin D, selenium, other vitamins, and calcium, does not clearly benefit for improving cognition in people who are well-nourished. Coconut oil is being used in the prevention or treatment of Alzheimer’s disease is a topic of immense interest for the researchers; however, no significant research is conducted in this regard up till now (Surr, 2019).

Another theme derived by findings is the use of music for the intervention of malnutrition.The possible effects of music interventions were investigated using a meta-analysis. There were 12 studies that satisfied the criteria for inclusion. These studies concluded that music interventions have a role in the agitation of dementia. A substantial number of studies does not make any differentiation between various subtypes of these music interventions. The comparison of subgroups indicate promising results for future systematic reviews (Pederso et al., 2017).

Conclusion:-

Overview of the findings:
Findings of the thematic analysis revealed thatfamily support is very important. Because it is a family who takes care of the eating patterns of dementia patients. Moreover, it was also explored that music can also help to maintain the eating habits of dementia patients. It was also found out that people with dementia can improve their eating habits with the help of supplements.

Suggestions:-

This study was very important as it opens new doors for researchers to research the efficacy of each treatment strategy explode by this study.Medical health professionals and psychiatrists first should focus on family support

and other treatment strategies instead of using supplements as a first-line treatment.Researchers should also explore the factors of malnutrition; it will help to control the risk of malnutrition among dementia patients.

Implications:
The findings of this study can be effectively implemented in the clinical population of dementia patients.

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