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ASSESSMENT OF THE NUTRITIONAL STATUS OF ELDERLY PEOPLE LIVING AT TAWERGHA REFUGEE CAMP IN BENGHAZI

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Abstract

Background

This study describes risk factors for poor nutrition among older Tawergha Refugees camp. The most important areas of nutritional risk for older refugees are: physical ability and mobility; income and access to land; access to appropriate food rations; meeting basic needs such as water, fuel, shelter; equal access to essential services (food distribution, health services, mills, feeding programmes); and psycho-social trauma.

Objectives

The present study was carried out to assess the nutritional status of the elderly using the Mini Nutritional Assessment (MNA) tool, and to assess the energy and nutrient intake of elderly

Method

This cross-sectional study was done from December 2019 to February 2020. The elderly those 60 and over years of age, who met the inclusion criteria participated in the study. A total of 50 elderly - 30 female, 20 males were selected. The questionnaire included the following measures: socio-demographic factors, medical history, and dietary history. Evaluation of anthropometric measurements (weight, height, body mass index was collected . Nutritional status was assessed by the MNA tool Mini Nutritional Assessment , a 24-h dietary recall method and FFQ, And Physical activity questionnaire.

Results

The sample included 20 men (40%) and 30 women (60%). Out of the total of 50 elderly persons, 22% were found to be malnourished and 46% were at risk of malnutrition. Malnutrition affected significantly more frequently the subjects eating daily bread, however, the risk of malnutrition is observed significantly more frequently in the group of older people who are rarely meat intake and did not eat of fast food at all. The relationship MNA score and socio-economic factors were statistically non-significant , while the association between nutritional status and nutrients intakes intake was found to be significant. Also, the findings revealed that most of older people are in sedentary category and the relation between physical activity and gender was un-significant.

Conclusion

The present findings reveal that malnutrition is not an uncommon problem in the elderly, These findings may alert policy makers to plan appropriate intervention in order to improve the quality of life and increase successful aging and further studies are needed in this regard.

Key words: Elderly, Nutrition status, Malnutrition, MNA, Nutrient intake.

Introduction

Worldwide we are facing a serious demographic challenge due to the dramatic growth of the population over 60 years. It is expected that the proportion of this population will nearly double from 12 to 22 %, between 2015 and 2050. This demographic shift comes with major health and socio-economic concerns[1]. People not only live longer, but the proportion of older people in the population is in developing countries and this proportion is expected to increase[1].

Nutrition is a fundamental determinant of both health and disease and its role in extending a healthy lifespan in this age group. Notably, malnutrition is one of the main threats to health and quality of life among the elderly. Therefore, knowledge about nutritional status among the elderly is essential for the promotion and maintenance of healthy ageing and to support the development of health protection policies and equity in elderly health care(1). Under nutrition among elderly is the main cause for concern, since its relation to morbidity and mortality is stronger than that of obesity (2).The prevalence of malnutrition increases with escalating frailty and physical dependence. The complex biological process of ageing is accompanied by many socioeconomic factors that also impact on nutritional status. Anorexia and weight loss are common in the elderly and the

physiological decrease in appetite and food intake that accompanies normal ageing can be augmented by acute and chronic disease(3). Contributing factors are altered smell/taste, poor dental health and age-related achlorhydria, in addition a decrease in physical activity leads to reduction of lean body mass and accumulation of body fat. Also important are social factors such as poverty , displacement, and isolation, psychological factors such as depression and dementia, and medical factors such as poor visual acuity and prescribed medication(3). In the elderly population, adequate diet and nutritional status are important health determinants .

Nutritional Needs and Changes with Advancing Years

Aging is accompanied by many changes that can make it more difficult for nutritional needs to be met. These changes have been categorised into broad categories of physical/physiological and psychosocial [4].

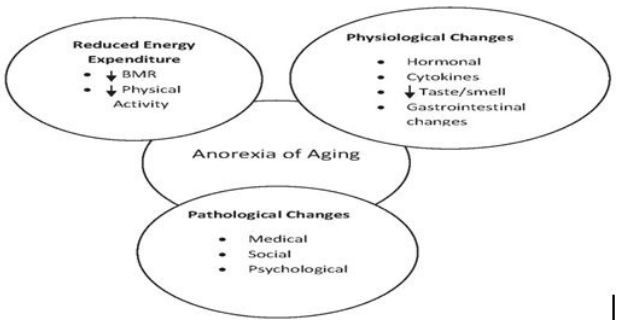

Figure 1 : Factors which challenge nutritional status in older adults.

Health Consequences of under and over Nutrition in Older Adults

Older people are vulnerable to malnutrition which is associated with an increased risk of morbidity and mortality . Increased falls, vulnerability to infection, loss of energy and mobility, poor wound healing and confusion are reported consequences of undernutrition [5]. Malnutrition is common in all types of institutional care settings, however much of the malnutrition present on admission to institutions is thought likely to originate in the community among free living older adults. In the UK the prevalence of malnutrition in patients admitted to hospital from home is reported to be 23% [5]. A small US study which aimed to improve the recognition of undernutrition in community dwelling older adults identified 4% with malnutrition and a further 56% at high risk [6]. Social deprivation is one of many factors likely to contribute to this. Those with low incomes are known to have a poorer diet than the more affluent and patients at risk of malnutrition on admission to hospital were found more likely to have come from areas of deprivation [6]. undernutrition may be considered a greater risk to health in older people, obesity also increases morbidity and mortality from diabetes, hypertension and cardiovascular disease .The prevalence of overweight and obesity continues to rise amongst the population as a whole, and current evidence indicates that the prevalence in those aged 65+ is increasing[6].

Approaches to Challenge Sub-Optimal Nutritional Status

Recognition of deteriorating or poor nutritional status is key to reversing any effect. Many screening tools have been validated for use in older adults and are available [6]. Assessment of nutritional status including biochemical tests, anthropometric measurements and dietary assessment. However, there was wide range of nutritional assessment tools have been developed in various settings; while . Early identification of undernutrition can have a positive effect on other clinical outcomes, such as improvement in physical function and reduced length of hospital stay [7]. In UK, the most widely used screening tool is the Malnutrition Universal Screening Tool (MUST), a five-step screening tool that includes guidelines for the formulation of a care plan[7].

In order to assess nutritional status in elderly patients a multidimensional approach is needed . Use of a validated screening tool were recommended by international organizations, the Mini Nutritional Assessment (MNA) is highly specific and reliable and the most well-validated nutrition screening tool for adults 65 and older[8] . Across Europe the Mini Nutritional Assessment tool (MNA-SF) is more widely used and was developed specifically for use in older adult. The MNA-SF detected undernutrition in frail elderly in greater numbers than MUST [8]. Simple, noninvasive, inexpensive, and easy for nurses and other clinicians to use, the newest MNA-short form (MNA-SF) can quickly and easily identify older adults who are at risk for malnutrition or malnourished. Nurses are key players in successful malnutrition screening in hospitals, long-term care, home care, and community settings[8]. The tool was shown to have an accuracy of 92% when it was compared with a clinical evaluation by two physicians' specialists in nutrition, and 98% when it was compared with a comprehensive nutritional assessment, including biochemical tests, anthropometric measurements and dietary assessment[9]. Another screening tool to detection of nutritional risk among the elderly is the Nutrition Screening Initiative[10] . The Initiative, a national effort supported by more than 25 professional organizations, is committed to the identification of nutritional problems in older persons and to improved delivery of nutrition services to those with the greatest nutrition-related health risks . The Initiative has developed strategies for increasing consumer awareness of nutrition problems and detecting nutritional risk among older people in different settings[10]. This study has been designed to determine the prevalence of malnutrition and the socio-economic and health factors affecting on nutritional status among elderly people living at Tawergha refugee camp.

Aim and objectives

Aim: Study the prevalence of malnutrition and the socio-economic and health factors affecting on nutritional status among elderly people aged 60 years old and over living at Tawergha refugee camp in Benghazi .

Objectives

- To determine the prevalence of malnutrition among both gender elderly people living at refugees
- To show the effects of demographic characteristic on nutritional status of elderly people living at refuges
- To assess the energy and nutrient intake of elderly displacement
- To study the relation of chronic disease with nutritional status of elderly

Ethical issues

Careful consideration will be given to the ethical scopes of this study. As this study involving Tawerghan elderly people who were displacement since 2011, therefore ethical approval will be required. Formal ethical approval will be granted by Tawegha camp management for both camp (Alkesh camp and Gayounis camp). The researcher will guarantee to assured that participant's details will remain confidential and will not be available to anyone, and participants will be assigned numbers

Subjects and Method

Study Design, Setting and Subjects

It was cross-sectional study random sample was carried out on elderly people, living at Elkesh Tawergha refugee camp and Gariouns Tawergha refugee camp In Benghazi to assessment the nutritional status of elderly and relation. those with health conditions with nutritional status from December 2019 to February 2020. The access to this study was obtained following ethical approval after consultation with and permission of local camp administration at Elkesh and Gariouns Tawegha refugee camp in Benghazi. The target of study consisted of Subjects who were 60 years old and over were selected to the study. All older adults aged 60 years and above in Tawega camp and who gave informed consent or assent were eligible to take part in the study.

Procedure and Materials

The study will be carried out over 2 months period from December 2019 to February 2020. The researcher will seek approval to conduct the study and to discuss access with site mangers. Researchers should be set to meet with participants to discuss the study, obtaining an informed consent, measurements, and data collections. Researchers were set to meet with participants, the study was explained, and an informed consent obtained. In this study, data of 50 elderly patients were collected with a structured questionnaire was used to obtain information on demography, socioeconomic background, medical history, and dietary history 24HRS recall method and FFQ.

The questionnaire was structured and sectioned into the following sub-headings

Demographic data, socioeconomic background and dietary history. The Mini Nutrition Assessment (MNA) tool was employed to assess the level of malnutrition of participants and a 24-hour dietary recall , food frequency questionnaire (FFQ) were used to estimate dietary intakes of Participants. The questionnaire was piloted before commencement of data collection.

Assessment of nutritional status

As no single measure predicts overall nutritional status in older adult , a multidimensional approach has been proposed to include measurement of body composition, dietary intake, and biochemical measures. However, this is clearly not practical for all elderly routine clinical practice and therefore the use of nutritional screening tools, such as MNA-SF.

Evaluation of anthropometric measurements (weight, height, body mass index was collected as following: Participants was instructed to remove their shoes, over jacket and heavy items in their pockets and their weight in Kilograms and height in Meter was recorded, BMI was determined for participants. The BMI was calculated as body weight in kilogram divided by square of height in meters BMI = Weight (kg) / Height2 (m2).

The participants were classified into normal nutritional status, at risk of malnutrition and malnourished based on their individual BMI and MNA scores.

Mini Nutritional Assessment (MNA)

The MNA questionnaire which contained diet and personal histories and anthropometrics measurements, was used as an assessment tool to detect nutritional risk [11]. The MNA has recently been designed and validated to provide a single, rapid assessment of nutritional status in elderly patients in outpatient clinics, hospitals and nursing homes. It has been translated into several languages and validated in many clinics around the world [12].

CLASSIFICATION OF NUTRITIONAL STATUS

The study participants were classified into three categories based on their MNA score

points as indicated below:

- points: Normal nutrition14-12
- points: At risk of malnutrition 11-8
- points: Malnutrition 7-0

laboratory investigation like Serum albumin level, serum level of hemoglobin ,CRP, serum creatinine, S. cholesterol and body mass index (BMI) were the most predictive parameters of malnutrition . However, the nutritional status of patients was assessed by extensive anthropometric measurements. Whereas the biochemical markers of nutrition such as serum albumin was unavailable. Full evaluation of anthropometric measurements

(weight, height, body mass index. Participants was instructed to remove their shoes, over jacket and heavy items in their pockets and their weight in Kilograms and height in Meter was recorded, BMI calculated and recorded BMI = weight (kg)/ [height (m)]².

Results

The aim of this study was to assessment of the nutritional status of elderly people living in Tawergha refugee camp in Benghazi. A total of 50 elderly people that living in Elkesh and Garyouns camp were recruited for the study, the age ranges was between (60-95 years. The results showed the participants involved in this study are 30 female and 20 males.

Description of study participamnts

The background characteristics of the participants are summarized in Table 4.1. A total of 50 participants aged between 60 to 95 years old were enrolled for the study. .

Out of the total sample, 40% (n=20) respondents were males and 60% (n=30) were Females as shown in table (4.1). Most of age group in study sample was 60-70 year which was 34% among female group and 24% among male group, our result shows that no one of male group among age 90-100, while only 2% was regard female group. Table (4,2) shows all the previously mentioned.

Table 4.1: Distribution of gender.

gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	20	40.0	40.0	40.0
	female	30	60.0	60.0	100.0
	Total	50	100.0	100.0	

The tables below (4.2) demonstrated that those aged 60-70 years was the most age group in our sample which constituted 58% of the participants . As for the age group 90-100 years represented the lowest age range which was 2%. However, among age group 70-80 age ,80-90 age group was 28%,12% respectively.

Table(4.2): Distribution of age of respondent.

	Frequency	Percent
Education level		
Illtreat	42	84.0
educated	8	16.0
Income		
(200_400)	3	6.0
(400_800)	43	86.0
(800_1000)	2	4.0

Socioeconomic characteristic

All participants enrolment in this study were of Libyan nationality,and all of them were displaced from the city of Tawergha to Benghazi in the same year since 2011. The most of family income in our sample were between 400-800 D.L about 86% while the family with low income was 200-400D.L about 6% as well as 4% the income was 800-100D.L. The table below demonstrated that the highest percent elderly was illtreat which about 84% while about 16% of elderly was educated as illustrated in table (4.3). Results reveal that the most of elderly about 43(86%) were unemployed , while about 7(14%) they had a job. Regarding to marital status, we shown the most of elderly participants in this study was married were about 96% ,however, 4% were unmarried as illustrated in table (4.3).

Table (4.3): Socio-demographic characteristics of participants.

not available	1	2
None	1	2
Occupation		
not worker	43	86
Worker	7	14
Time of displacement		
2011	50	100
Nationality		
Libyan	50	100
Marital status		
not married	2	4
Married	48	96

Assessment of nutritional status of elderly people

Assessment of level of malnutrition using the MNA tool

MNA tool was used to assess dietary intake, mobility and other psychological variables. The study participants showed varying degrees of weight reduction in the past three months. Study participants were categorized on the basis of their Mini Nutritional Assessment Score.

A score of 0-7 points indicates malnourished elderly, 8 - 11 points risk of malnutrition and 12 - 14 normal nutritional status. According to the MNA results Figure {4.2} 22% of the group members were malnourished (<17 points) , 46%were at risk of malnutrition (17-23.5 points) and32%were well nourished (> 23.5 points). A majority of the participants were found to be at risk of malnutrition.

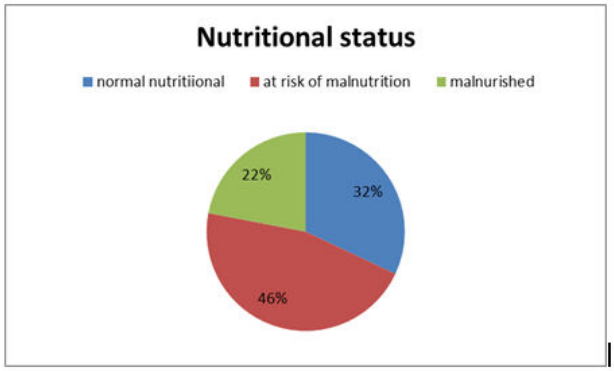

Figure 2 : The prevalence of malnutrition and risk of malnutrition in older residents of studied Tawergha camp refuges.

Nutrient intake of participants

The average daily caloric and nutrient intake of participants was assessed from information gathered by means of one-day 24-hour dietary recall. The results are summarized in Tables below (4.4,4.5,4.6,4.7). The mean intake from calory, CHO, fat, protein was 908.8,136.2,21.3,48.3 respectively.

Table (4.4): Daily calory intake of participants.

Energy				
age	**N**	**Mean**	**Minimum**	**Maximum**
60_70	29	1015.21	70	2300
70_80	14	778.36	224	1591
80_90	6	700.33	498	908
90_100	1	901.00	901	901
Total	50	908.82	70	2300

Table (4.5): Daily carbohydrate intake of participants.

Carbohydrate			
age	N	Mean	Minimum
60_70	29	160.2414	23.00
70_80	14	107.9000	5.60
80_90	6	93.1667	63.00
90_100	1	95.0000	95.00
Total	50	136.2320	5.60

Table (4.6): Daily carbohydrate intake of participants.

fat				
age	N	Mean	Minimum	Maximum
60_70	29	20.3793	.00	62.00
70_80	14	23.5357	.00	53.00
80_90	6	18.6667	9.00	29.00
90_100	1	37.0000	37.00	37.00
Total	50	21.3900	.00	62.00

Table(4.7): Daily protein intake of participants.

protein				
age	N	Mean	Minimum	Maximum
60_70	29	56.69	3	125
70_80	14	37.50	9	93
80_90	6	34.67	19	52
90_100	1	41.00	41	41
Total	50	48.36	3	125

Association between calory intake and mini nutritional assessment

Table 4.8 below shows the association between calory and MNA parameters, based on result there was showed the excess of calorie intake was among the elderly who at risk of malnutrition, however, the minimum calory intake was among malnutrition group.

As well as elderly with normal nutrition the maximum and minimum caloric intakes were 1969 kcal and 270 kcal respectively. Our result demonstrated that association between calory intake and MNA scores was non-significant (P value=0.370)

Table (4.8): Association between MNA scores and calorie.

Calorie					Chi-square value	P_value
MNA	N	Mean	Minimum	Maximum		
normal nutritional	16	969.25	270	1969		
at risk of malnutrition	23	971.13	116	2300		
malnourished	11	690.64	70	1235	100	.370

pattern of meal

Bread

The figure (4.3) below shows that 80% of elderly were daily consumption of bread , however, only 4% of elderly were not ate bread ,as well as elderly who intake weekly and rarely was 4% and 12% respectively. As demonstrated in the table below (4.9).

Table(4.9): Association between MNA scores and bread group consumption by subjects.

bread * MNA						Chi-square value	P_valu
		MNA			Total		
		normal nutritional	at risk of malnutrition	malnourished			
bread	no intake	1	1	0	2		
	rarely	2	2	2	6		
	daily	12	19	9	40		
	weekly	1	1	0	2		
Total		16	23	11	50	1.936	0.925

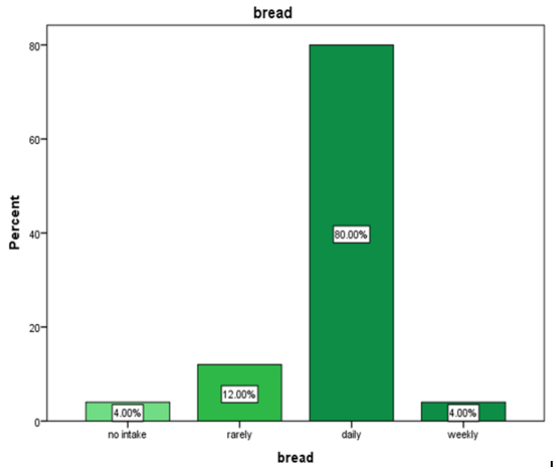

Figure (4.3): Bread group consumption by subject.

Discussion

The aim of this study was to assess the dietary intake and nutritional status of elderly people living in Tawegha Refugees Camp. Majority of the elderly in the study were found to be at risk of malnutrition which was 46%, the overall prevalence of under-nutrition as defined by the Mini Nutritional Assessment tool was found to be 22% in both genders. reported that majority of older people in Tawegha Refugees Camp , and as such were poorly educated and already at risk of under-nutrition. This malnutrition impacts significantly on their health, considering the elderly are already vulnerable both socially and biologically. Malnutrition in the elderly causes' reduction in physical strength, inactivity, increased risk of accidents and weakened immune system, to mention a few.

According to the one review of 79 published studies conducted on elderly people (13), the proportion of elderly people suffering from malnutrition varies between 1% and 74%and the risk of malnutrition were between 8% and 87% .In the study performed in all nursing homes in Helsinki, malnutrition was common among elderly residents living in nursing homes and according to the MNA, 11% to 57% of the elderly people studied actually suffered from malnutrition, and 40% to 89% were at risk of malnutrition, whereas only 0% to 16% was in good nutritional status (14) . This wide range might be partly the result of the many different methods and parameters that are used to measure nutritional status and subsequently define malnutrition and the different institutional settings in the world.

Required data of nutritional intake were obtained from the subjects by 24 –hour recall of food and food frequency questionnaire (FFQ); they were requested to remember and tell the researcher all foods and drinks taken during the last 24 hours. It is worth to note hear that it was not easy to complete these intakes as they were all in need of talk for other things rather than their food intake. The mean intake of elderly people from calory, CHO, fat, protein was 908.8,136.2,21.3, and 48.3 respectively . the mean energy intake of participants was observed to be slightly lower Compared to a study conducted by French et al., (2007), where the mean dietary calory intakes of the participants under investigation did not show a significant difference from the average U.S adult population (15).

The mean protein and fat intake do not exceed the recommendation

As represented in tables the highest intake of calory, CHO ,and protein was among male group

than female.while dietary fat intake was significantly higher in female than in male. Study done by Arias et al., (2003) had similar observation with our result, the average protein intake, as is normal in developed countries, widely exceeds the recommended intakes (estimated at 56 g/day) and is greater in males than in females(16).

In contrast with cohort study by Beasley et al.(2010) , who evaluated more than 90,000 women and men aged between 50 and 79 years, found greater protein consumption by female group than male group [17]. The result of our study the maximum daily amount of male and female calory intakes was 2300kcal1969 kcal respectively, male group was higher than female and similar to the results in other studies on elderly people. Dietary energy intake was significantly higher in men (130.5%) than in women with regard to the recommended value[18]. Our result shows that the maximum intakes of fat were belong female group . However other study done by Campbell et al .(2004) lipid intake was similar in both men and women [19]. Although they were 80% of elderly was daily consuming of bread. , however, only 4% of elderly were not ate or rarely intake of bread as demonstrated in our result. similarly, other two studies done by Henderson et al.,(2003)& Karaagaogluet al., (2008) conducted in Turkey, it was reported that the most common food consumed among elderly was bread and bread type consumed was white bread. These results show that bread is one of the most important elements of Turkish diet among aging group [20,21].

Conclusion

This study identifies that most of Tawergha elderly was at risk of malnutrition as well as most of age group at risk of malnutrition was 60-7-year Simultaneous, most age group had malnutrition was 70-80 year. . In addition, we show that most of elderly was daily consumed of bread whereas did not eat of fast

food at all. The nutritional status assessed by the MNA with nutrient intake was no correlated.

We conclude that our study has confirmed that malnutrition remains a common problem among older people living in Tawegha refuges in the intake of energy and some nutrients by the elderly people were lower than DRI recommended. The elderly population is affected by many causes of malnutrition, which can be reversed if it is addressed earlier than the development of malnutrition. Management of malnutrition in the elderly population requires a multidisciplinary approach that treats pathology as chronic disease and uses both social support ,psychological and dietary forms of intervention. Without intervention, my leading to poor health and decreased quality of life. It is important to assess elderly individuals' nutrition, pay attention to nutritional problems, use more nutritional supplements, and provide energy and protein-dense food which might delay malnutrition or even improve the nutritional status of elderly Tawergha Refugees camp.

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