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Original Research Article

Nutritional Status of Institutionalized Elderly

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Abstract: Malnutrition is a serious problem and become a global issue among elderly, especially who are institutionalized. A good nutritional status will promote elderly's health as well as reduce mortality and morbidity rate among elderly. In Malaysia, the number of the elderly population is increasing and the need for extensive and current information regarding on this population are also increased. Moreover, under nutrition or protein-energy malnutrition becomes more common among elderly. However, there is little information regarding on the health, nutritional status and their social conditions. Therefore, it is an essential for health care providers to assess nutritional status of the elderly in order to manage this problem. The objective of this study was to examine the level of nutritional status among institutionalized elderly. Stratified random sampling was used and total sample size was 80 elderly from selected nursing homes. The level of nutritional status of elderly was assessed using the Mini Nutritional Assessment form and described as in percentage and frequencies. The majority of institutionalized elderly were at risk of malnutrition (70%), while (25%) of them were malnourished and only (5%) were at normal nutritional status. It is found that there was a relationship between Body Mass Index (BMI) and their nutritional status. Most of the elderly in the institutionalized area (nursing homes) at Kuantan, Pahang was at risk of malnutrition. This assessment will help health care providers in detecting the nutritional problem early and plan for the intervention and promote wellness among elderly.
Keywords: Nutritional status, Mini Nutritional Assessment form, institutionalized elderly, malnutrition.

INTRODUCTION

Nutrition is very important in elderly in order to maintain their functional status and quality of life successfully. Nutritional assessment is one of the most important determinants of a population's health and disease status among elderly. Nutritional status among elderly depends on the various factors which are neuropsychological nutrition problems, mobility, and dentition and also related diseases [8]. According to Caselato-Sousa *et al.;* (2011), malnutrition in elderly happens because of the decrease in food consumption with old age [2]. Then, this low consumption of calories contributes to nutritional deficiencies and also malnutrition. At the age becomes older and older, many of the elderly will face the problem with their health, have chronic diseases and the physiological or psychosocial changes may lead them to under-nutrition [7]. According to the WHO in 2002, elderly peoples are potentially population risk of malnutrition [9]. People should not neglect the fact that many factors that induce the elderly people at nutritional risk in developing countries. The lack of early diagnosis of malnutrition among elderly people may lead to the deterioration of their health and increased the risk of mortality among elderly. If there is no detection for this nutritional problem earlier, it will cause many effects such as general weakness, fatigue, weight loss, anemia, functional impairment, weakening the immune system, increased susceptibility to diseases and infections, decreased cognitive functioning and even death. The purpose of this study was to examine the level of nutritional status of institutionalized elderly. Moreover, it aims to identify the relationship between the socio demographic data and nutritional status. It was hoped that this study will enable to evaluate the nutritional status among elderly people in nursing homes. This study also can create awareness and may provide knowledge regarding the availability of using the Mini Nutritional Assessment (MNA) form to assess nutritional status in institutionalized elderly. Therefore, this assessment will help health care providers in the early detection of the nutritional problem and plan for the intervention.

MATERIALS AND METHOD

Descriptive cross sectional design with stratified random sampling method was used in this study. The sample population was randomly selected 9 persons fromfrom each nine nursing homes who were meeting the criteria and willing to participate in the study. The total sample population was 80.This study was conducted at nursing homes that have been registered under Pahang Social Welfare Department in Kuantan; Pahang.Mini Nutritional Assessment (MNA) form having Cronbach's alpha coefficient0.68 was used as a research tool. The questionnaires were divided into three parts that consist of total 18 questions. Part one related with socio demographic data while part two was about screening nutritional. In part two, the total maximal score was 14 points. If the individual obtains ≥12 points in this screening score they did not have to complete the assessment because it was indicated that the normal nutritional status. However, if the individual obtains ≤11 points they need complete the assessment part. Then, in part three was the assessment with maximum 16 points. In this form, the malnutrition indicator score was evaluated by total up the point obtained by individual in part two and three. Thus, the results were analyzed into three condition which were well nourished or normal nutritional status ≥ 24 points, at risk of malnutrition 23.5-17 points and malnourished <17 points. Ethical consideration was obtained from Kulliyyah of Nursing Post Graduate Research Committee (KNPGRC), International Islamic University Malaysia Ethic Committee (IREC), Pahang Public Welfare Department, Public Welfare Department of Kuantan, Pahang and each director of nursing homes in Kuantan, Pahang. Collected data were analyzed using SPSS version 20.

RESULTS

Total 80 elderly were involved and the majority of the participants were female (58.8%) and (41.3%) were male.

Level of nutritional status in elderly

25% of institutionalized were malnourished, 70% of them were at risk of malnutrition and 5% were at normal nutritional status. It was shown in table 1.

There is no significant relationship between level of nutritional status and gender among institutionalized elderly X^2 (2, N= 80) = 6.035, p =0.066 (p> 0.05). Regarding the relationship between level of nutritional status and age of institutionalized elderly, there was no significant relationship between these variables, X^2 (4, N= 80) = 6.793, p= 0.157 (p>0.05).However, the relationship between level of nutritional status and BMI, there was a significant relationship between these variables, X^2 (4, N= 80) = 14.569, p= 0.008 (p<0.05).These results were shown in table 2, 3 and 4.

Table 1: Nutritional status level in institutionalized elderly (N=80).

Item	Frequency (n)	Percentage (%)
Nutritional status		
Malnourished	20	25%
At risk of malnutrition	56	70%
Normal nutritional status	4	5%

Table 2: Relationship between gender and level of nutritional status

Item	Level of nutritional status			X^2	df	*P* value
	Malnourished (n=20)	At risk of malnutrition (n=56)	Normal nutritional status (n=4)			
Gender:						
Male	8	21	4	6.035[a]	2	0.066
Female	12	35	0			

*p value < 0.05

a- Continuity correction

Table 3: Relationship between age and level of nutritional status

Item	Level of nutritional status	X^2	df	p value

	Malnourished (n=20)	At risk of malnutrition (n=56)	Normal nutritional status			
Age 60-69 years old 70-79 years old 80-89 years old	 6 12 2	 31 17 8	 3 1 0	6.793[a]	4	0.157

*p value < 0.05
a- Continuity correction

Table 4: Relationship between BMI and level of nutritional status

Item	Level of nutritional status			X^2	df	p value
	Malnourished (n=20)	At risk of malnutrition (n=56)	Normal nutritional status (n=4)			
BMI Underweight Normal Overweight	 7 10 3	 4 45 7	 0 2 2	14.569[a]	4	0.008

*p value < 0.05
a- Continuity correction

DISCUSSION

Based on this study, it is shown that the majority of institutionalized elderly were at risk of malnutrition (70%), while (25%) of them were malnourished and (5%) were at normal nutritional status. This finding was supported by Machado &Coelho [5]. According to the researchers, in their study, more than half of their participants were at risk of malnutrition with the result (55.6%), while (8.3%) was with malnutrition and (36.1%) were well nourished. This indicated that the institutionalized elderly are prone to have malnutrition. Besides, the study from Oliveira, Fogaca & Leandro-Merhi showed that about (37.1%) of the elderly were at risk of malnutrition, (29.1%) were malnourished and (33.8%) were classified as normal nutritional status [6]. Lastly, the study from Kulnik & Elmadfa also showed a majority of the elderly were at risk of malnutrition. About (48.3%) of the elderly were at risk of malnutrition, (37.8%) of them were malnourished and only (13.9%) were at a satisfactory of nutritional status [4]. Malnutrition is a very serious problem among elderly because it can deteriorate their condition to become worsening. Through malnutrition also they tend to develop other serious disease and become frail.

There was no significant relationship between gender and level of nutritional status of institutionalized elderly. However, the female is more malnourished than male in this study. According to Rambousková et al, more female was malnourished compared to the male [7]. Moreover, there was no significant relationship between age and level of nutritional status.

However, this study indicated that there was a significant association between BMI and level of nutritional status. In this study, BMI was categorized into three categories based on the study from Babiarczyk & Turbiarz [1]. The underweight of the institutionalized elderly in the study area was defined by BMI value <19 kg/m², while normal weight is from a value of 19 kg/m² to 24.9 kg/m² and overweight is 25 kg/m² to 29.9 kg/m². This study was supported by Machado & Coelho that also showed a significant relation between BMI and nutritional status of elderly in their study. They said that the leanness and overweight in elderly is at higher risk of death [5]. Moreover, according to Faxén-Irving et al., in their study showed that one third of the respondents had BMI <22kg/m² which indicate the sign of the nutritional depletion [3].

CONCLUSION

Through the nutritional assessment using MNA questionnaire, most of the institutionalized elderly at Kuantan, Pahang was at risk of malnutrition. This nutritional assessment very essential among the elderly because good nutritional status may prevent them becoming deteriorate in health status. The health care providers should not neglect this problem and this nutritional assessment may help them to plan for treatment and management problem malnutrition in elderly.

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