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NUTRITIONAL STATUS AMONG ELDERLY RESIDING IN LONGHOUSES AT KUCHING, SARAWAK

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ABSTRACT

Background: Nutrition is a major aspect in healthcare. Poor nutritional status may affect elderly particularly during the aging process. It becomes the challenge for older population to maintain their health with good nutritional level. **Objectives:** This study aims to investigate the nutritional status among elderly in longhouses and its' association with demographic factors. **Methods:** This is a cross-sectional quantitative study. A total of 109 Malaysian older adults were recruited using convenience sampling method. The MNA®-SF questionnaire was adopted to determine the nutritional status among elderly. **Results:** The findings of the study show that elderly at longhouses are at risk for malnutrition (M=10.15, SD=2.289). There is a statistically significant relationship between age/alcohol consumption and nutritional status (p<0.05). **Conclusion:** The study reveals an important information regarding nutrition status of the elderly residing in long houses at Kuching and Serian divisions. The local public health providers are recommended to take further actions in enhancing the nutritional status of the older population in Sarawak.

Keywords: Nutritional Status; Elderly; Longhouses

INTRODUCTION

Malnutrition is a major concern and it is always being neglected by the community. Physiological changes due to aging may affects the nutritional needs and intake of the elderly and that leading to malnutrition (Churak *et al.*, 2019). Other factors causing inadequate nutrition intake include problems in cognitive ability, socioeconomic status, food accessibility and environmental factors (Patil & Shindhe, 2018). Malnutrition can also cause negative implications such as weight loss, poorer health outcomes and increased risk of morbidity and mortality.

Maintaining a good nutritional status is essential for elderlies to maximise their physical and cognitive performances, overall health, and quality of life. However, the prevalence of malnutrition among elderly is on the rise (Amarya, Singh & Sabharwal, 2015). Many elderlies have low food intake and/or consume poor quality diet that result in lower nutritional status and weight loss over a long period of time (Mangels, 2018; Poda *et al.*, 2019). Gomes, Soares & Gonçalves (2016) and Nohan *et al.*, (2020) reported that age, gender, level of education, socioeconomic status, mouth or teeth problems and having less than four meals a day are those factors that affecting quality of dietary intake among elderly. In their studies, Lin *et al.*, (2017) and Churak *et al.*, (2019) revealed that age (p=0.002) was correlated significantly with nutritional status in which older age was associated with poor nutrition level among older adults. The findings of the studies are congruent with Wong *et al.*, (2019) that elderly aged from 60 and above are at risk of malnutrition.

Lifestyle factors such as smoking, and alcohol consumption are found to be associated with increased risk of malnutrition among elderly. According to Zainal *et al.*, (2019) individual who smoke more than 20 cigarettes per day has poorer dietary practice and diet quality compared to those who never smoked. In addition, Lin *et al.*, (2017) reported that smoking has direct effect on lower level of nutrition (p=0.055) on elderly related to tobacco effect asiciated with poorer

taste sensation and lower appetite. Similarly, Churak *et al.,* (2019) found smoking is associated with the elderly's nutritional status (p<0.001). The findings from the literature suggest that prolonged addiction to tobacco would increase the risk of malnutrition among elderly. In their study, Lin *et al.* (2017) also reported that alcohol consumption causes increased risk of poor nutrition among elderly (p<0.001). Both smoking and alcohol consumption increase the risk for many health consequences and malnutrition among the elderly population.

Other factors that may affect nutritional status include low education level, single/widow status, and low income in older adults (Poda *et al.*, 2019). At the study sites, majority of the elderly are retired and many of them are on low income from farming. Older people with economic disadvantage and/or lower educational level have lack of knowledge on nutrition information and food choices, and that leading to poor dietary patterns (Cheong *et al.*, 2017). These findings are supported by Shahar et al. 2019 that low socioeconomic status is associated with poor nutritional status among the older population. Besides, psychosocial vulnerability is also linked to high risk of mortality in elderly. Many of the elderly from rural areas are either living alone or with their old spouse while children are away in urban areas for work commitment or extended family (Agree, 2018). Past literature shows that older adults who are socially isolated are also at a greater risk of dietary inadequacy. Apparently, it is due to poor social support in practicing good diet habit (Rapacciuolo *et al.*, 2019).

Nutritional assessment for older population is important particularly for those in the rural areas. Elderly residents in the Sarawak districts are experiencing difficulties for adequate healthcare services due to poor transportation access (Azhar *et al.*, 2016). In addition, most of the residents are depending on the social welfare support and financial assistance from their children. These prompt the researchers to investigate the nutritional status of the elderly population residing in longhouses, Sarawak. The findings of the study will be useful for the public health division in the respective areas to further strategies health-related programmes for the targeted population.

Purpose of the Study

The purpose of the study was to determine the nutritional status among elderly and its' association with demographic factors among elderly residing at long houses in Serian and Kuching divisions, Sarawak.

Research Questions

1. To determine the nutritional status among the elderly residing at long houses at Kuching.

2. To determine the association between nutritional status and demographic factors (age, gender, smoking, alcohol consumption) among elderly residing at long houses at Kuching.

METHODOLOGY

A cross-sectional descriptive quantitative study was used to determine the nutritional status among elderly residing in long houses in Kuching. The study was conducted at Kuching division (Kampung Bumbok, Seratau and Punau) and Serian division (Kampung Pichin and Taee). A total of 109 elderly participated in the study.

Mini Nutritional Assessment Short Form (MNA®-SF) was adopted from Nestle Nutrition Institution with permission to assess the nutritional status of elderly. The MNA®-SF consists of 6 items on screening of food intake, weight loss, mobility, psychological, neuropsychological condition, and calf circumference The scoring system of the tool is categorised into: 0-7 points (malnourished), 8-11 points (at risk of malnutrition) and 12-14 points (normal nutrition status).

A panel of three experts include two Pegawai Sains Pemakanan Gred U41 and one lecturer from Nutrition & Dietician division validated the questionnaire. Thirty participants were employed for the pilot study. The Intra Class Correlation Coefficient (ICC) value 0.89 was obtained, indicating an excellent reliability of the MNA®-SF tool for the study. Thus, no amendment was done to the questionnaire.

Data Analysis

Data was analysed using the Statistical Packages for the Social Sciences (SPSS) version 26. Normality of the data is assumed in this study. Therefore, the association between the demographic factors and nutritional status was done using Pearson correlation test (age) and independent t-test (gender, smoking, alcohol consumption).

RESULTS AND DISCUSSION

Table 1 shows the demographic data of the elderly

participants. Majority of the elderly participants were aged between age 60 to 69 years, and with mean age of 72.6 (SD=7.761). More than half of the participants were females (58.1%) and the rest were 41.4% males. With regards to race, majority participants were Bidayuh (97.2%). For marital status, 93.6% of the participants are married and 6.4% are single. Most of the them (44%) did not have a formal education. Of this, their highest education level was at the primary level (41%), and only 12.8% participants were at secondary level and above. Approximately 77.1% of the participants were unemployed. The mean household income was at RM 349.17±SD 383.056. Majority of them (94.5%) earn less than RM 1200 per month. This is in line with the mean household income reported under the Program Pembasmian Kemiskinan Bandar (PPKB) 2019 by Ministry of Health in Malaysia (Ministry of Health, 2019).

The BMI was at a mean value of 23.32 (SD=4.8707). Data reported that 52.4% participants were overweight and obese, 38.5% had a normal weight, and 10.1% was underweight. More than half of the elderly (59.6%) have a calf circumference of 31centimeters and above (M=32.4±SD3.881). In relation to medical conditions, 35.8% elderly has gastrointestinal disease, less than 5% for cardiovascular disease and cancer and none reported for liver disease based on their medical record. Approximately 23% and 79% elderly participants have medical history of diabetes and hypertension respectively. Many elderlies (82.6%) claim they do not smoke, while 31.2% of them consume alcohol with about 3 glasses per week. More than half (56.9%) participants do not wear dentures, and 65.1% of them indicated they have difficulty in chewing food.

Table 1: Descriptive Analysis on Demographic Data of Participants (n=109)

Variables	Frequency (f)	Percentage (%)	Mean (M)	Standard Deviation (SD)
Age			72.6	7.761
60 - 69	46	43.1		
70 - 79	36	33		
80 - 89	26	23.9		
Gender				
Male	45	41.3		
Female	64	58.7		
Race				
Bidayuh	106	97.2		
Others	3	2.8		
Marital status				
Married	102	93.6		
Single	7	6.4		
Education level				
No formal education	48	44		
Primary	45	41		
Secondary	14	12.8		
Tertiary	2	1.8		
Job status				
Employed/self employed	25	22.9		
Unemployed	84	77.1		
Household income			RM 349.17	383.056
< RM 1200/month	103	94.5		
≥RM1200 to RM1500	4	3.7		
>RM 1500	2	1.8		
BMI			23.32	4.8707
Underweight < 18.5	11	10.1		
Normal weight 18.5 - 22.9	42	38.5		
Overweight 23 - 24.9	22	21.2		
Obese I 25 - 29.9	27	24.8		
Obese II ≥30	7	6.4		
Calf circumference (CC)			32.4	3.881
CC less than 31	44	40.4		
CC 31 and greater	65	59.6		
Gastrointestinal disease				
Yes	39	35.8		
No	70	64.2		
Liver disease				
Yes	0	0		
No	109	100		

Cerebrovascular disease				
Yes	5	4.6		
No	104	95.4		
Diabetes Mellitus				
Yes	25	22.9		
No	**84**	**77.1**		
Hypertension				
Yes	86	78.9		
No	23	21.1		
Cancer				
Yes	2	1.8		
No	107	98.2		
Smoking				
Yes	19	17.4		
No	90	82.6		
Cigarette sticks/day	19	17.4	1.7	4.019
Years of smoking	19	17.4	6.8	15.68
Alcohol consumption				
Yes	34	31.2		
No	75	68.8		
Frequency of alcohol consumption (glass/week)			3.4	0.942
Sometime (1-2 times/month)	2	1.8		
Seasonal (1-2 times/year)	29	26.6		
Frequently (at least once/week)	3	2.8		
Wearing denture				
Yes	47	43.1		
No	62	56.9		
Difficulty in chewing food				
Yes	71	65.1		
No	38	34.9		

Next, Table 2 shows the nutritional status among elderly in the study. Findings reveal that elderly are at risk of malnutrition (M=10.15, SD=2.289). This is in line with past studies on nutritional status among Malaysian population in which elderly are prone to have nutritional deficiencies and they are at risk of malnutrition (Churak *et al.*, 2019; Norazman, Adznam & Jamaluddin, 2020; Rosli *et al.*, 2019). It is believed that increase in age, low level of/no formal education and low income cause lower socioeconomic status. With this, Shahar *et al.*, (2019) supported that the prevalence of low socioeconomic among older adults in the rural area (50.6%) was high as compared to those in the urban area (49.4%). From data analysis, the level of BMI is imbalance in elderly residents with more than half were overweight/obese and some were underweight. Besides, many elderly residents are not wearing denture and they reported having difficulty in chewing food. Baumgarten *et al.*, (2017) explain losing of teeth is associated with poor chewing ability and eating habit. This explain the contributing factors for risk of malnutrition among the elderly.

Table 2 Nutritional Status among Elderly (n=109)

	Mean (M)	Standard Deviation (SD)
Nutritional Status	10.15	2.289

In Table 3, the findings of the study show that there was a statistically significant association among age (p=0.000), alcohol consumption (p=0.018) with nutritional status at significant value of 0.05. However, there was no significant correlation found for gender and smoking as p>0.05.

Table 3: Association Between Demographic Variables (Age, Gender, Smoking and Alcohol Consumption) and Nutritional Status among Elderly (n=109

Variable	Sig (2 tails)
Age	0.000*
Gender	0.057
Smoking	0.367
Alcohol consumption	0.018*

**p<0.05*

As human become aged, the digestive system will decrease in gastric acid secretion, leading to lower absorption of iron and vitamin B12. Decrease in sense of taste and smell may result in poor appetite and alteration in eating habits that consequently lead to nutritional deficiencies (Armaya *et al.,* 2015). Besides, deterioration in sensory functions such as vision loss related to old age can cause difficulty in food preparation and cooking. In addition, elderly residents are having one or more chronic diseases and many of them are having difficulty in chewing. All these explain the possible reasons for the

correlation between age and risk of malnutrition among the older population residing in long houses.

The findings of the study reveal a significant association between alcohol consumption and nutritional status. This is congruent with Damayanthi *et al.* (2018), Lin *et al.,* (2017) and Poda e*t al.,* (2019). This could be explained that alcohol inhibits the metabolism and absorption of nutrients by reducing the secretion of important digestive enzymes from the pancreas when lining of the cells in the stomach and intestinal tract are damaged. As a result, smoking impedes the nutrient process and causes nutritional disorders (Marcel & Schub, 2018).

There is no statistically significant association found between gender and nutritional status. This finding is supported by Patil & Shindle (2018), but contrary to studies by Churak *et al.*, (2019) and Lin *et al.* (2017). In their studies, females are more independent in term of financial status and they are able to prepare food on their own. In the current study, both male and female residents are equally in lower socioeconomic status. Therefore, gender difference is not the significant factor in malnutrition. Data analysed also shows that there is no association between smoking and nutritional status among elderly residing in longhouses. The finding of the study is contradicted with Lin *et al.,* (2017) and Poda *et al.*, (2019). The reason for the inconsistent findings may be due to the fact that a majority of the female respondents do not smoke.

CONCLUSION

In conclusion, elderly residing in longhouses at Kuching and Serian are at risk of malnutrition. The findings of the study reveal that age and alcohol consumption are significant factors influence on level of nutritional status in older adults. This study highlights the needs to address nutritional status among elderly in the Sarawak divisions. It is essential for the government and local authority in the public health sector to take further actions in improving elderly's nutritional status for their health and well-being.

Conflict of Interests

The authors declare that they have no conflict of interest.

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