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Nutrition Knowledge Among Malaysian Elderly

(Tahap Pengetahuan Pemakanan di Kalangan Warga Tua di Malaysia)

NORIMAH A.KARIM, NIK SHANITA SAFII, SAFIAH MOHD YUSOF, NORAZLIANA MOHD NOOR, ZAWIAH AHMAD & TEE E SIONG

ABSTRACT

This paper reports the nutrition knowledge of Malaysian elderly, as part of a nationwide study to evaluate the status of nutrition knowledge, attitude and practice (KAP) of food and nutrition among various communities in Malaysia. A total of 906 elderly, age ranging between 60 to 96 years old, with mean age 67.4 ± 6.7 years representing all states in Malaysia participated in the study. An interview administered questionnaire was used to assess the nutrition knowledge and to collect demographic data of the elderly. Subjects were in the 60-65 years (51%) and more than 65 years (49%) age category. There were 46% Malays, 32% Chinese, 6% Indians while the remaining 16% comprised of other minority groups in Malaysia such as Iban, Kadazan, Melanau, Orang Asli and others. More than half of the elderly (54%) had no formal education, 36% completed primary schooling and only 9% finished secondary education. Overall 73% elderly were categorized as having poor nutrition knowledge, 18% moderate and only 9% good. The minority groups had the highest percentage of poor nutrition knowledge (91%) while the Chinese had the highest percentage of good nutrition knowledge (11%). More female (78%) than male (67%) had poor nutrition knowledge, in contrast to more male (10%) than female (8%) with good nutrition knowledge. Chi square test showed that there was a significant correlation between educational status and nutrition knowledge. This was reflected in the results which showed that 81% elderly with no formal education were categorized in the poor nutrition knowledge group. Majority of the elderly did not know about foods to be consumed most (88%), or to be eaten least (87%). Only a quarter to a third of the elderly responded correctly to questions on nutrient function and content. The question on foods with high salt was well responded by the elderly (65%). It is quite discouraging to show that a majority of Malaysian elderly had poor nutrition knowledge. This study indicated that appropriate nutrition education interventions need to be implemented to improve the shortcomings of nutrition knowledge among the Malaysian elderly.

Key words: Malaysia, Elderly, Nutrition Knowledge

ABSTRAK

Kertas kerja ini melaporkan pengetahuan pemakanan warga tua Malaysia, yang merupakan sebahagian dari kajian seluruh negara untuk menilai status pengetahuan pemakanan, sikap dan amalan makanan dan pemakanan di kalangan berbagai komuniti di Malaysia. Seramai 906 warga tua, berumur di antara 60 hingga 96 tahun, dengan purata umur 67.4 ± 6.7 yang mewakili semua negeri di Malaysia mengambil bahagian dalam kajian ini. Soal selidik yang dilakukan secara temu bual digunakan untuk menentukan pengetahuan pemakanan dan untuk pengumpulan data demografi. Subjek adalah dalam kategori umur 60-65 tahun (51%) dan lebih dari 65 tahun (49%) . Terdapat 46% Melayu, 32% Cina, 6% India sementara yang selebih 16% terdiri daripada etnik minoriti seperti Iban, Kadazan, Melanau, Orang Asli dan lain-lain. Lebih dari separuh warga tua (54%) tidak mempunyai pendidikan formal, 36% tamat sekolah rendah dan hanya 9% tamat sekolah menengah. Secara keseluruhan, 73% warga tua mempunyai pengetahuan pemakanan yang tidak baik, 18% sederhana dan 9% baik. Kumpulan etnik minoriti paling ramai menunjukkan pengetahuan pemakanan yang tidak baik (91%) sementara etnik Cina paling ramai menunjukkan pengetahuan pemakanan yang baik (11%). Lebih ramai perempuan (78%) dari lelaki (67%) mempunyai pengetahuan pemakanan yang tidak baik. Di sebaliknya lebih ramai lelaki (10%) dari perempuan (8%) mempunyai pengetahuan pemakanan yang baik. Ujian Chi square menunjukkan terdapat korelasi yang signifikan di antara pendidikan dan pengetahuan pemakanan. Ini dicerminkan dalam keputusan yang menunjukkan 81% warga tua yang tiada pendidikan formal dikategorikan mempunyai pengetahuan pemakanan yang tidak baik. Majoriti warga tua tidak tahu tentang makanan yang perlu dimakan paling banyak (88%), atau paling sedikit (87%). Hanya satu per empat hingga satu per tiga sahaja yang boleh menjawab dengan betul soalan berkenaan fungsi dan kandungan nutrien. Soalan tentang makanan masin boleh dijawab dengan betul oleh 65% wargatua. Agak membimbangkan majoriti warga tua Malaysia mempunyai pengetahuan pemakanan yang tidak baik. Kajian ini menunjukkan intervensi pendidikan pemakanan yang sesuai perlu dilaksanakan untuk menambah baik kelemahan pengetahuan pemakanan di kalangan warga tua Malaysia.

Kata kunci: Malaysia, Warga tua, Pengetahuan Pemakanan

INTRODUCTION

The changes in demographic transition of the population have given rise to the increase in proportion of the elderly in Malaysia (Department of Statistics 2005). Several studies in the last few years demonstrated that elderly were vulnerable to malnutrition, both undernutrition and overnutrition (Suzana et al. 2007; Suzana,

Earland and Abd Rahman 2001; Suriah et al. 1998). These findings have created a challenge among nutritionists and other health professionals to improve or at least maintain the nutritional status of the elderly.

A move was initiated by the Ministry of Health in 1991 by launching a Healthy Lifestyle Campaign, in their effort to promote a healthy lifestyle in the community. This campaign incorporated the promotion of healthy eating habits and maintaining a desirable dietary pattern. In 1997, a second phase of the healthy lifestyle campaign was launched. In these campaigns, the targeted groups were communities such as primary school children, adolescents, adults, elderly and food handlers.

Butriss (1997) reported that the lack of general nutrition knowledge was the main obstacle in promoting a change in the food habits. This inadequacy in nutrition knowledge could be an indicator for a need of nutrition information sources which were accessible and reliable. A study among urban Malaysian Chinese elderly demonstrated that the level of nutrition knowledge was quite poor (Zaitun & Low 1995). Comparably another study among rural Malaysian Malay elderly indicated a similar outcome (Suzana & Azehan 2002). Other than these small studies with regards to sample size, there was still a dearth of a national study determining the nutrition knowledge of the elderly. Thus, this study was embarked to assess the nutrition knowledge among the elderly. The results from this study would serve as a baseline data that could be used for monitoring the effectiveness of the Healthy Lifestyle Campaigns.

SUBJECTS AND METHODS

SAMPLING

The elderly subjects, defined as individuals aged 60 years and above (Department of Statistics 2003) were part of a national survey, covering all states in the Peninsular Malaysia, as well as Sabah and Sarawak of East Malaysia, to evaluate the status of nutrition knowledge, attitude and practice (KAP) of food and nutrition among various communities in Malaysia. As in the selection of a national survey, subjects were selected based on a national estimate sampling approach which was used for all target groups including the elderly. The sampling frame was obtained from the Department of Statistics, National Household Sampling Frame (NHSF). Allocation of the sample size was assisted by the Department of Statistics. The households (living quarters, LQ) were the sampling unit. An estimated 5000 LQ from 585 enumeration blocks (EB) were selected for the study. Finally the elderly subjects recruited into this study consisted of 906, representing 6% of the total sampling involved (15,205) in a national survey on knowledge, attitude and practice (KAP) of food and nutrition of communities.

DATA COLLECTION

A detailed briefing session on the implementation of data collection was conducted in September 1997. Enumerators were briefed and trained on how to administer the questionnaire to ensure uniformity in data gathering. A set of guidelines for the completion of the questionnaire was provided to all research team. Data collection were conducted between October 1997 and March 1998. The elderly were selected from both the urban and rural area and recruited from households. In this elderly subjects, the questionnaire was interview administered. Subjects who could read and write, could choose to self administer the questionnaire themselves, however they would be assisted by the enumerators when required.

KAP QUESTIONNAIRE

The KAP questionnaire was prepared by members of a Technical Working Group on Research (TWG-R). The questionnaire was developed specific for each target group, in this instance the elderly group. Various factors such as the level of understanding of the group, specific interests and characteristics were considered in the development of questionnaire. The face validity of the questionnaire was tested among the members in the TWG-R before the actual data collection. The final questionnaire for the elderly consisted of 66 questions which enquired about demography, nutrition knowledge, attitude and practice. There were 20 questions on nutrition knowledge. These questions included knowledge on balanced diet, healthy eating, food pyramid, food group and food to be consumed most and least, food which were rich sources of energy, carbohydrate protein, fat, vitamins, minerals, fibre, cholesterol and sodium. There were also questions on food preparation, effect of excessive energy and sugar intake, importance of exercise and ways to maintain desirable body weight. Most of the questions were multiple choice questions, with a few open ended questions for listing names of food. The questionnaires were available in both Bahasa Malaysia and English language.

In calculating the nutrition knowledge scores, one mark was given to every correct response while no mark to an incorrect or unsure response. The lowest possible score was zero while the highest was 20. The raw scores were then converted to percentage. The nutrition knowledge were categorized as poor (0-50%), moderate (51-74%) and good (>75%), as suggested by the Technical Working Group on Research, Ministry of Health. This category of nutrition knowledge was based on the Committee of Nutrition, Attitude and Practice, Department of Nutrition and Dietetics, UKM (1999).

PROCESSING OF COMPLETED QUESTIONNAIRES

Completed questionnaires which were received from the various districts and states were screened for their completeness. The multiple choice questions were processed using a computer software, Teleforms while the open ended questions were coded manually and scanned using an automated scanner. The results output was then verified before the data were converted to dBase software. The data from this study were analysed using the Statistical Product Service Solution for Windows (SPSS version 10.0). The results were presented descriptively for categorical data while as means and standard deviation for continuous data. The chi–square test of independence was used to compare group differences in categorical data. Statistical significance was set at $p < 0.05$.

RESULTS

Table 1 shows the socio-demographic data of the elderly in the study. There were more female (56%) than male (44%) who participated in the study. There was comparable percentage of elderly in the 60-65 years age group and above 65 years age group. Mean age was 67.4 ± 6.7 years old. Sixty seven percent of the elderly were married, 30% widowed and the remaining 3% were either single, divorced or separated. By ethnicity, there were 46% Malays, 32% Chinese, 6% Indians while the remaining 16% were other minority ethnic groups such as Iban, Kadazan, Melanau , Orang Asli and others. More than half of the elderly (54%) had never attended school, 36% completed primary schooling while only 9% and 1% finished secondary education and university education respectively. Based on the Prime Minister's Department (2001) household income category, more than two thirds (72%) of the elderly were categorized as having low household income with the mean income of RM1342 per month.

The nutrition knowledge of the elderly by category is shown in Figure 1. Overall 73% elderly were categorized as having poor knowledge, 18% moderate and only 9% good. By sex, more female (78%) than male (67%) had poor nutrition knowledge, in contrast more male (10%) than female (8%) had good nutrition knowledge (Figure 2). Among the elderly with or without formal education, it was shown that a much higher percentage of the elderly (81%) without formal education were in the poor knowledge group (Figure 3). The Chi square test also indicated that there was a significant correlation ($p < 0.05$) between educational status and nutrition knowledge score.

TABLE 1. Selected socio-demographic characteristics of the elderly (n=906)

Characteristics	n	%	Mean	Range
Sex: Male	399	44		
Female	507	56		
Age (years):			67.4 ± 6.7	60 - 96
60-65	458	51		
> 65	448	49		
Marital status:				
Married	607	67		
Widowed	271	30		
Single / divorced / separated	28	3		
Ethnic:				
Malay	417	46		
Chinese	290	32		
Indian	54	6		
Others	145	16		
Educational status:				
No formal education	489	54		
Primary school	326	36		
Secondary school	82	9		
Tertiary education	9	1		
Monthly income (RM)			1342 ± 1886	0-20,000
< 1500	652	72		
1500 – 3500	199	22		
> 3500	55	6		
Household size			5	0-18
1	91	10		
2-4	371	41		
5-7	299	33		
> 7	145	16		

Among ethnic groups, in descending order, the minority groups had the highest percentage of poor nutrition knowledge (91%), followed by the Malays, Chinese and Indians. On the other hand in the good nutrition knowledge category, the proportion was highest among the Chinese (11%), followed by the Malays, Indians and the minority groups. (Figure 4).

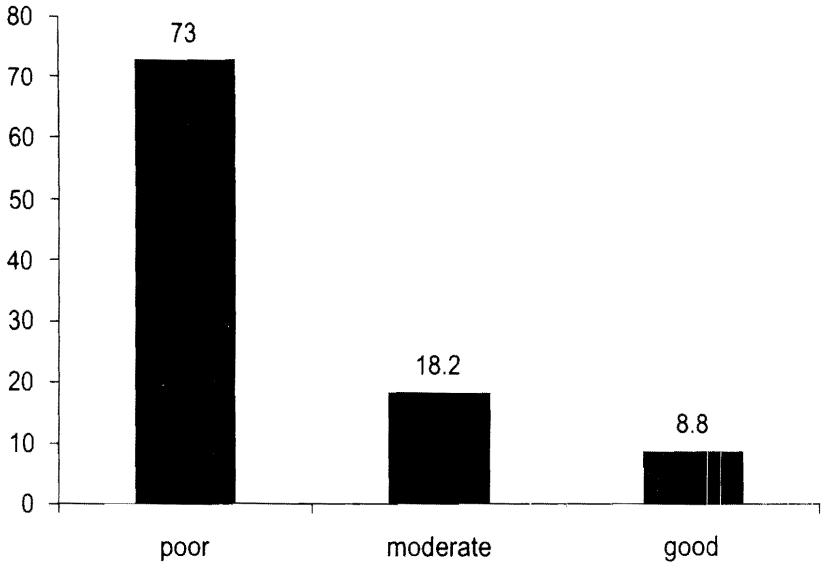

FIGURE 1. Nutrition knowledge of the elderly by category

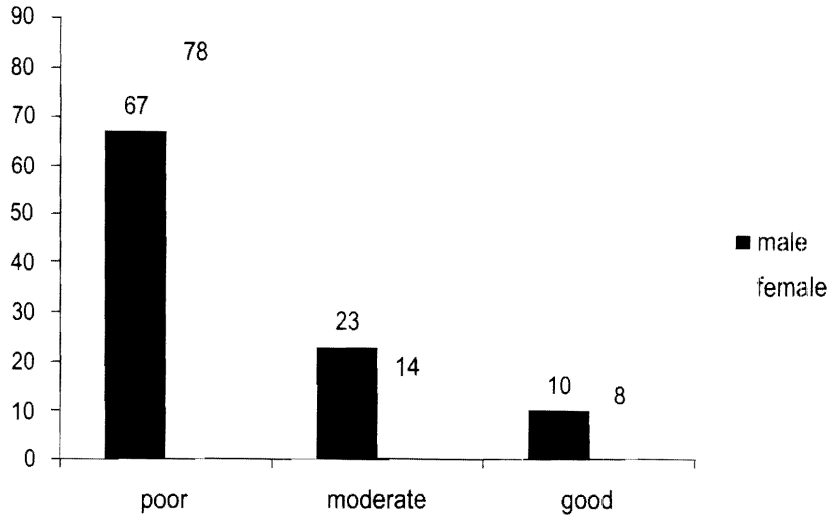

FIGURE 2. Nutrition knowledge category according to sex

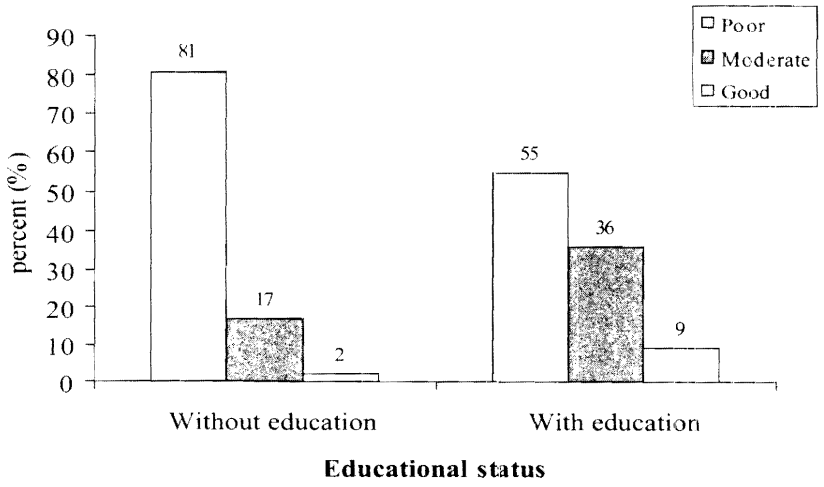

FIGURE 3. Nutrition knowledge category according to educational status

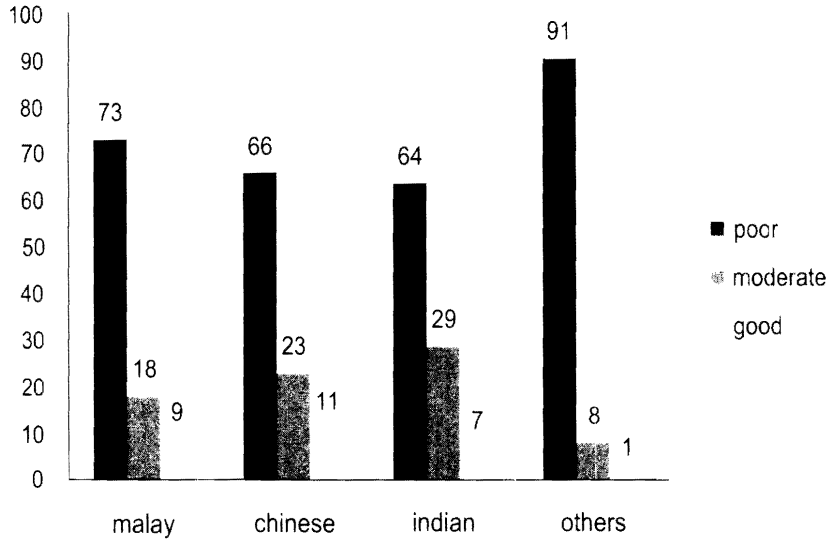

FIGURE 4. Nutrition knowledge category according to ethnic groups

A total of twenty knowledge questions were asked in the questionnaire. Eighty eight percent and 87% of the elderly respectively did not know the answers to the questions on foods to be consumed most and eaten least (Table 2). Only a quarter to a third of the elderly responded correctly to questions on nutrient function and content. Question on foods with high salt appeared to be the most well responded by the elderly (65%).

TABLE 2. Selected nutrition knowledge responses of the elderly (n = 906)

Nutrition knowledge responses	Correct (%)	Incorrect (%)	Do not know (%)
1. Knowledge about balance diet	236 (26)	109 (12)	561 (62)
2. Knowledge on good food practices	416 (46)	82 (9)	408 (45)
3. Knowledge on food to be consumed most	46 (5)	63 (7)	797 (88)
4. Knowledge on food to be eaten least	91 (10)	27 (3)	788 (87)
5. Knowledge on nutrient with the highest energy (kilocalories)	91 (10)	326 (36)	489 (54)
6. Knowledge on body building nutrient	199 (22)	209 (23)	498 (55)
7. Knowledge on protein-rich foods	371 (41)	109 (12)	426 (47)
8. Knowledge on carbohydrate-rich foods	308 (34)	136 (15)	462 (51)
9. Knowledge on foods rich in vitamin, mineral and fibre	290 (32)	127 (14)	489 (54)
10. Knowledge on fibre-rich foods	299 (33)	82 (9)	525 (58)
11. Knowledge on foods high in cholesterol	181 (20)	335 (37)	390 (43)
12. Knowledge on foods high in salt	588 (65)	82 (9)	236 (26)

DISCUSSIONS

This report discusses part of a national survey in evaluating nutrition knowledge among several communities such as primary school children, adolescents, adults, and elderly in Malaysia. In this study, the elderly represented about 6% of the total study population (15,205 subjects). By ethnic distribution, our sampling almost reflected the ethnic make up of the Malaysian population (46% Malays, 32% Chinese, 6% Indians). Despite the elderly were in their later part of their livelihood, the majority of the elderly were married, however quite a big proportion were already widowed. Our findings were similar to various other studies conducted among Malaysian elderly (Zaitun & Low 1995; Suzana et al. 2002). With regards to educational opportunities, it should be noted that 90% of the elderly completed primary education or did not have formal education at all. The reason for this could be partly due to the years in which they were at school going age, (i.e. 7 years and above) which coincided with the second world war. This probably denied many from attending formal education. These results were also supported by other studies (Suriah et al. 1998; Suzana, Earland and Abd Rahman 2001). The household income category could be grouped into low

(<RM1500), moderate (RM1500-3500) and high income (>RM 3500)(Prime Minister Department 2001). Based on this definition, it was expected that a majority of the elderly was classified in the low income grouping as many were either housewives, pensioners or unemployed. Furthermore many elderly had low education level. This appeared to be a common outcome among elderly studies, as a few studies have shown correlation between education levels and income (Zaitun & Low 1995; Suzana et al. 2002)

Nutrition knowledge plays an important role in promoting food habits changes in a community (Butriss 1996). This was even more imperative if the aim of the study was to improve the nutritional status of the elderly. This study indicated that most elderly had poor nutrition knowledge, and the situation was even worse if the elderly were female or had no formal education. Similar findings were reported amongst elderly in Taiwan (Lin & Lee 2005) and in Thailand (Aree et al. 2004). Siti Nur'Asyura et al. (2004) showed comparable results among rural elderly Malays. However studies in the United States and Switzerland among 35-75 year old adults showed that women were more knowledgeable than men about diet and health (Girois et al. 2001).

There were also differences in the level of knowledge between ethnic groups. The Chinese elderly appeared to be the most knowledgeable, possibly due to better education opportunities. There were more Chinese elderly who completed the secondary and university education. The results of this study were comparable with various earlier studies (Zaitun & Low 1995; Suzana et al. 2002; Lin & Lee 2005).

Even though the government, particularly the Ministry of Health had launched two healthy lifestyle campaigns in the last ten to fifteen years, it appeared that while the campaign aimed at creating nutrition awareness and educating nutrition in the community, the results demonstrated that the campaign might not succeed in reaching the community at large. This was particularly evident among the elderly. The elderly were still ignorant of nutrition information, probably due to their illiteracy. Suzana & Nor Azehan (2002) reported that the elderly relied on relatives, health professionals and television to get nutrition information. Only 11% of the elderly gained nutrition information from printed materials. A study in Taiwan also quoted similar results (Lin & Lee 2005). This is an indication that simple effective measures which consider the low education level should be adopted to make sure that the messages reach the target. More community service programs for instance nutrition counseling, talks and focus group discussions should be continued and enhanced to ensure that the nutrition knowledge and awareness are improved. These types of interventions have been shown to be effective and more favourable among the elderly both locally (Siti Nur'Asyura et al. 2004) and internationally (Patacca et al. 2004).

One of the limitations of this study was the KAP questionnaire used was not tested for its content validity and reliability. However, the questionnaire for the elderly was tested for its face validity before the actual data collection was

carried out. Despite this limitation, this study which was part of a national survey on nutrition knowledge of the various communities, was able to reveal the nutrition knowledge of these elderly. The results could also be utilized as a reference for comparisons among Malaysian elderly in future studies

CONCLUSIONS

The results of this study indicated that the nutrition knowledge of Malaysian elderly was unsatisfactory. Hence, careful identification of nutrition strategies is very crucial and should be incorporated into the nutrition intervention services program. This is to ensure that the program will be more effective and beneficial for the elderly especially those with low education level.

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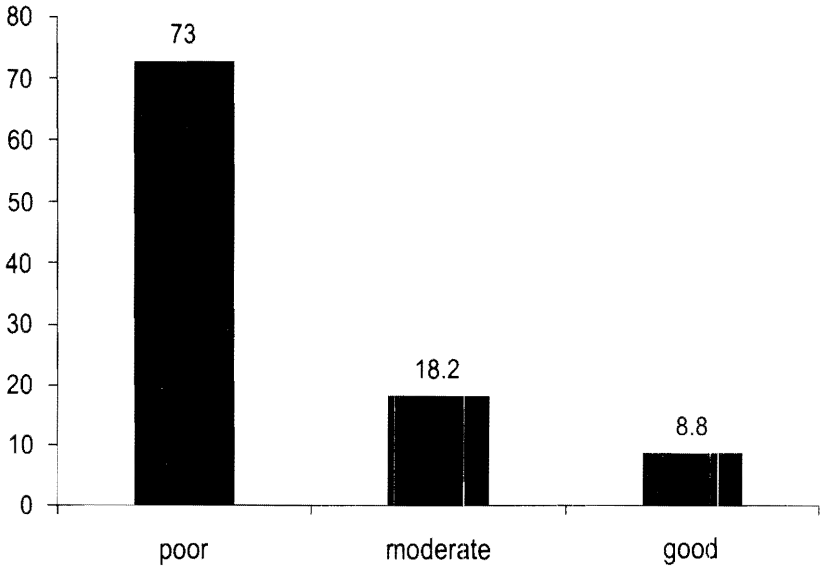


FIGURE 1. Nutrition knowledge of the elderly by category

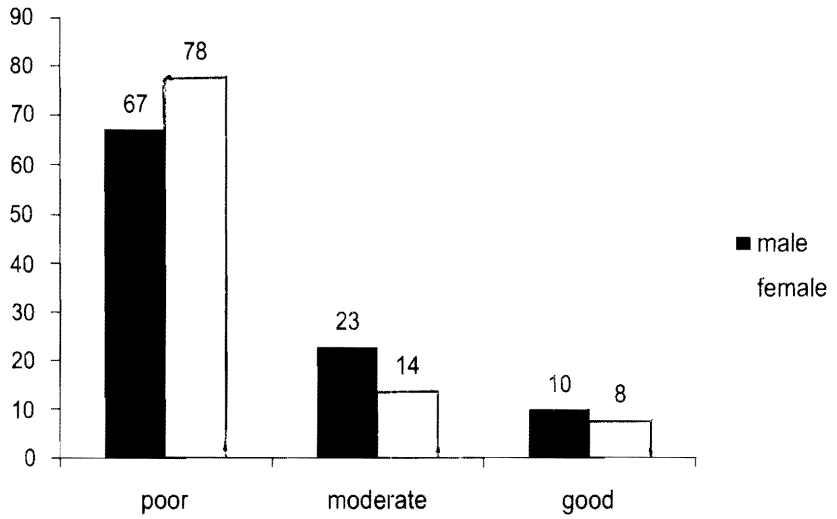


FIGURE 2. Nutrition knowledge category according to sex

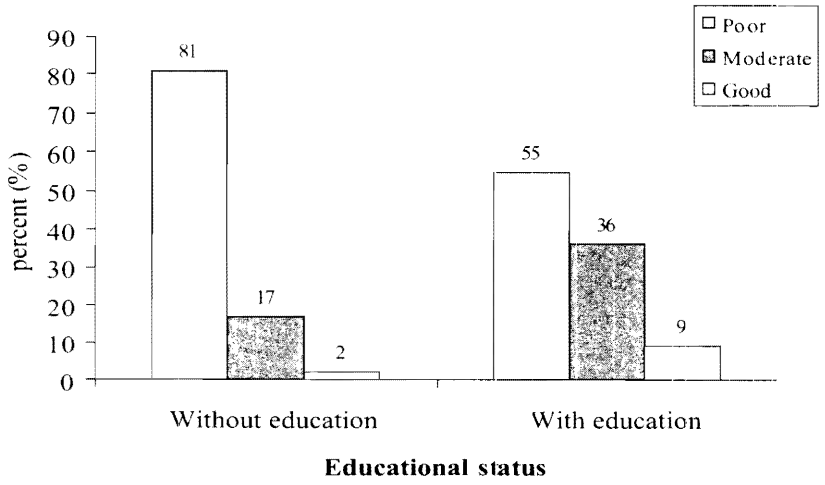


FIGURE 3. Nutrition knowledge category according to educational status

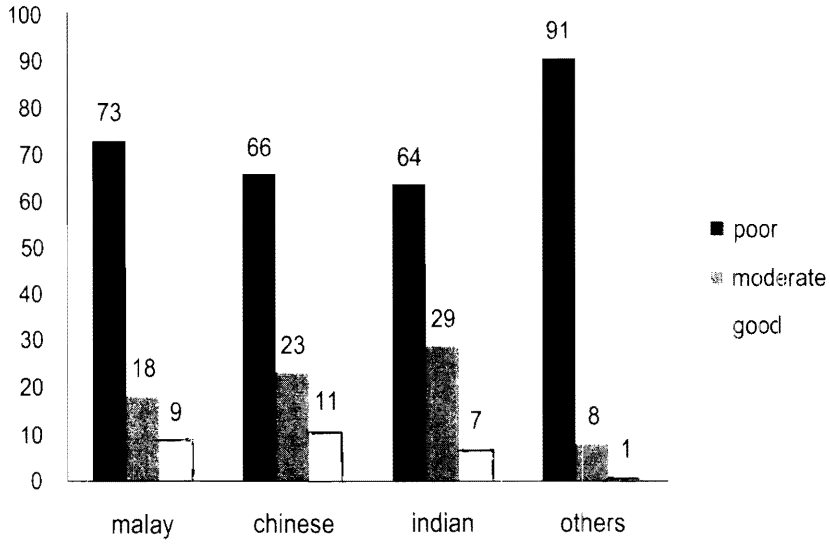
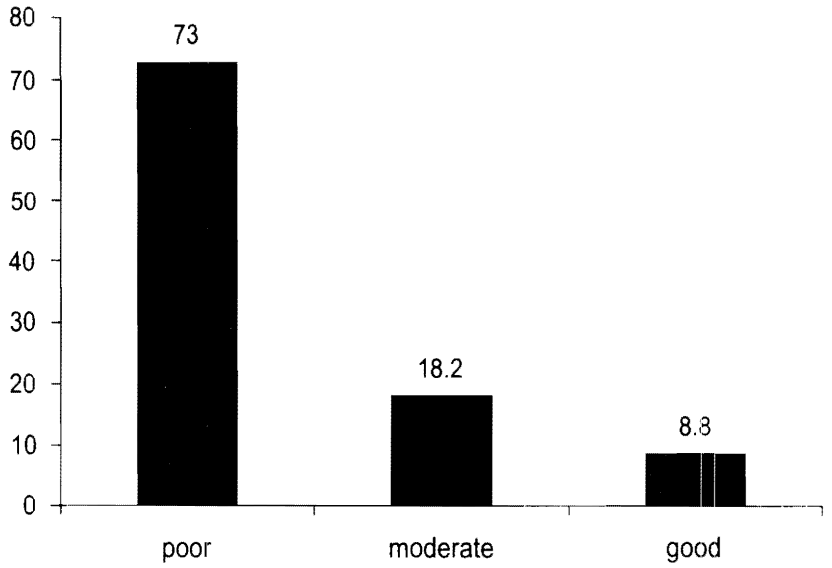


FIGURE 4. Nutrition knowledge category according to ethnic groups



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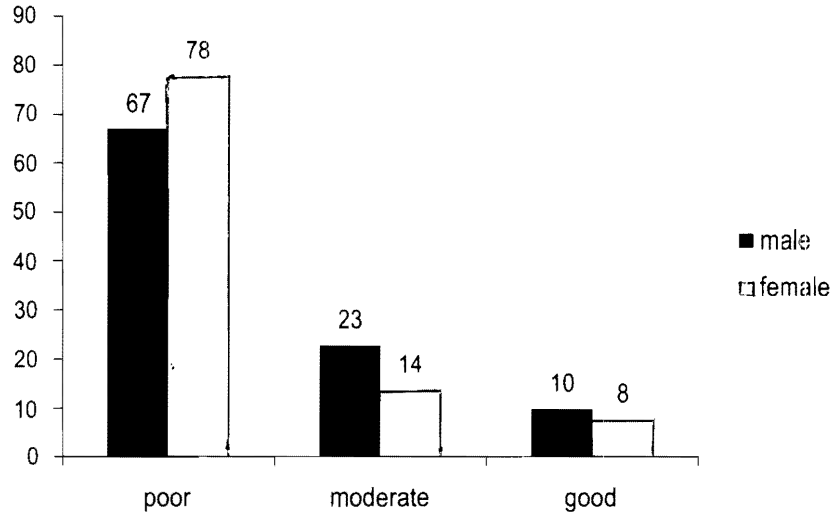

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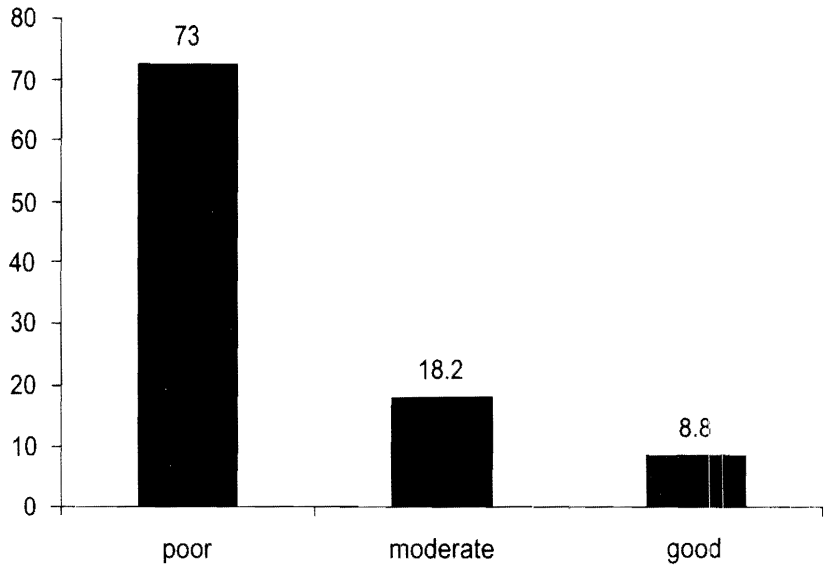

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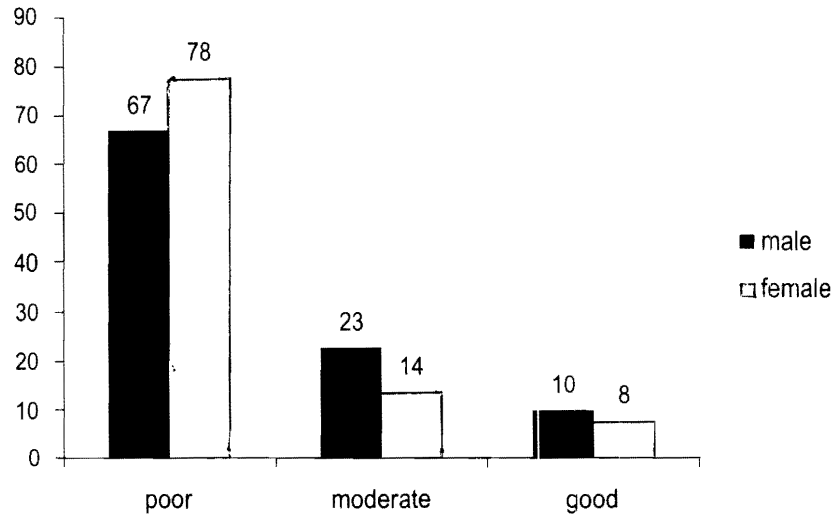

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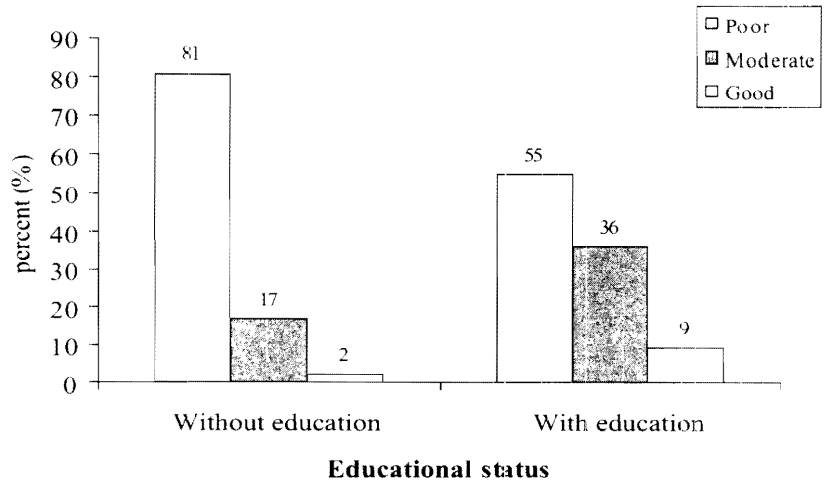

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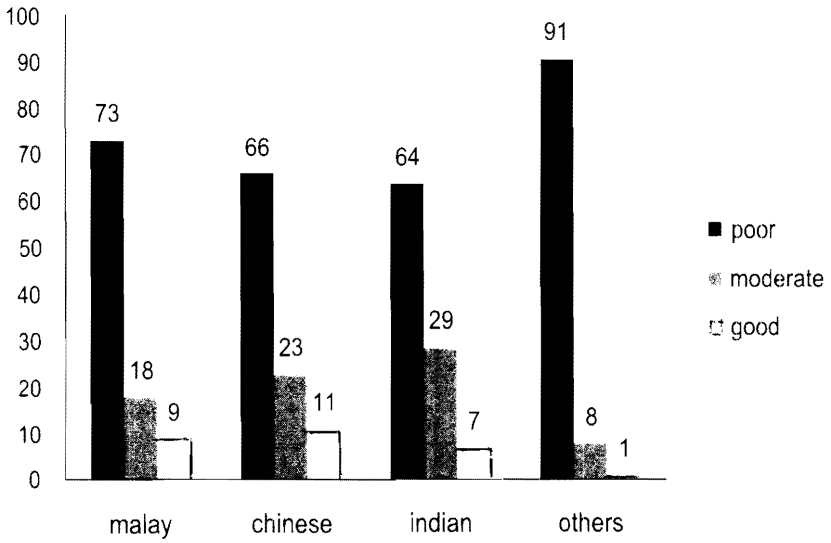

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