

# Factors Influencing Nutritional Knowledge of Teachers

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## ABSTRACT

THE RELATIONSHIPS of ethnicity, father's occupation, sex and respondent's academic major with nutritional health knowledge were studied on a sample of Malaysian teachers using a self-administered questionnaire. Results indicated that the level of nutritional health knowledge is low and dependent on sex but not on ethnicity, respondent's academic major and father's occupation. The need for males and physical education majors to improve their levels of nutritional health knowledge is indicated.

## INTRODUCTION

CORONARY HEART disease has become a leading cause of death in affluent countries such as the United States<sup>16</sup>. In Malaysia, deaths from circulatory diseases have risen from 20.8% in 1977 to 23.3% in 1981<sup>6</sup>. Agents which have been implicated in the etiology of this disease include over-consumption of food rich in calories, excess dietary intakes of saturated fats and cholesterol, high intakes of sugar and salt, hypertension, obesity, smoking and lack of exercise<sup>16</sup>.

Prevalence of some of these risk factors among adults might be associated with a lack of nutritional knowledge during childhood. Positive health habits ingrained during early childhood could therefore become a significant factor in the primary prevention of cardiovascular diseases during later life. Thus, there is a responsibility for teachers to be adequately equipped with nutritional health knowledge for them to transmit the right information<sup>7</sup>.

Studies on the effects of factors such as age, sex, socioeconomic status and educational attainment on health and nutritional health knowledge have been carried out on elementary teachers<sup>2,3,10,13</sup>, home economic teachers<sup>15</sup>, and high school students<sup>4</sup> among others.

The purposes of this study were to determine the level of nutritional health knowledge among teachers pursuing further studies at a local university, and to study the relationships of ethnicity, father's occupation, sex and respondent's academic major to nutritional health knowledge. The results will identify the needs of specific teacher groups who are instrumental in transmitting nutritional health information to Malaysian school children.

## METHODS

Seventy-seven teachers (47 males and 30 females) on further study leave at a local university were surveyed using a questionnaire self-administered in class. The questionnaire consisted of slightly modified test items originally developed by Auckland et al<sup>1</sup>. It contained demographic and mostly open-ended questions about basic areas in nutrition. The respondents took the entire test at one sitting.

The average age of the students was 33 (range 28 to 40). The ethnic distribution was 64.9% indigenous races of the Malay archipelago (92% Malay, 4% Iban, 2% Dusun and 2% Bugis), 22.1% Chinese and 13% Indians. Physical education majors comprised 32.5% of the sample while 67.5% were language (TESL) majors.

Socioeconomic status was loosely defined by father's occupation. Working class includes farmers, labourers, rubber estate and factory workers, drivers, bakers and fishermen. Middle class includes lecturers, teachers, working and retired government clerks, businessmen, writers and contractors.

For statistical analyses, responses in terms of the percentage answering individual questions correctly and chi-square analysis to assess relationships between categorical variables were used. A one-way analysis of variance was used to assess the significance of differences in mean scores for nutritional health knowledge of teachers of different ethnicity, sex, academic major and father's occupational background.

## RESULTS

THE MAJORITY of the respondents did not demonstrate adequate knowledge of nutrition. Only 40% knew their ideal bodyweight to  $\pm 5\%$ ; 50.6% knew the significance of 'unsaturated' as opposed to 'saturated' fats in food; 44.2% gave the correct reason for the importance of dietary fibre; 51.9% knew the relationship between cholesterol and coronary heart disease or atherosclerosis and 70.1% knew the food group which has the highest caloric content.

Females (56.7%) were more likely to give their correct ideal bodyweight to  $\pm 5\%$  than males (27.7%) (chi square = 6.47, 1df,  $p < 0.05$ ). Females (86.7%) were also more likely to give the correct food group which has the highest number of calories than males (59.6%) (chi square = 6.42, 1df,  $p < 0.05$ ). Relationships of all other individual test items to sex were not significant.

Among ethnic groups, Chinese respondents (76.5%) were more likely to associate cholesterol with coronary heart disease compared with Indians (70%) and the indigenous races (40%) (chi square = 8.26, 2df,  $p < 0.05$ ). Relationships of all other individual test items to ethnicity were not significant.

Teachers majoring in physical education (68%) were more likely to know the significance of 'unsaturated' and 'saturated' fats compared with teachers majoring in language (42.3%) (chi square = 4.46, 2df,  $p < 0.05$ ). Relationships of respondent's academic major with other individual test items were not significant.

If all questions were answered correctly, the best possible overall score was 36. Marks awarded to the correct responses to test items were summed to create the

nutritional health knowledge index. The grand mean score was 20.3 with a standard deviation of 5.3. The scores ranged from 7 to 33.

Using one way ANOVA, sex was shown to be significantly related to total knowledge score (see Table 1). In this category, females scored significantly higher than males ( $F_{1,75} = 6.42, p < 0.05$ ). Ethnicity, father's occupation and respondent's academic major were not significantly related to overall mean knowledge score.

Table 1  
Relationships of sex, ethnicity, father's occupation and respondent's academic major to overall knowledge score.

Category	n	Mean $\pm$ S.D.	F	P
Sex:				
Male	47	19.16 $\pm$ 5.29	6.42	p < 0.05
Female	30	22.00 $\pm$ 4.70		
Ethnicity:				
Indigenous races	50	17.75 $\pm$ 4.84	2.84	NS
Chinese	17	22.94 $\pm$ 6.51		
Indians	10	18.90 $\pm$ 3.18		
Father's occupation:				
Working class	41	19.77 $\pm$ 4.84	1.03	NS
Middle class	36	21.00 $\pm$ 5.71		
Academic major:				
Physical education	24	22.04 $\pm$ 4.00	3.68	NS
Language major	53	19.58 $\pm$ 5.60		

## DISCUSSION

IF NUTRITIONAL health knowledge is necessary for teachers to develop sound nutritional habits in school children, then the low level of knowledge of the sample surveyed here could be a cause for concern. Similar findings among teachers and nutritional educators in the United States have been reported<sup>2,3,5,9,10</sup>.

In this population of teachers, sex appears to have a significant effect on the overall nutritional health knowledge. The finding that females are significantly more knowledgeable than are males is in agreement with studies by others<sup>4,8</sup>. This could necessitate the reorientation of the traditional male sex role which stresses the detachment of the male from practices or activities related to feeding. An effort to educate male teachers about nutritional health knowledge is indicated. It is possible that females may be more conscious of diet for aesthetic reasons or due to peer pressure. This is supported by the finding that 56.7% of the females gave their correct ideal bodyweight as opposed to only 27.7% of the males. In addition, interest about home economics, nutrition and related areas such as meal planning is probably higher among females.

Ethnicity, respondent's academic major and father's occupation are not significantly related to overall knowledge. The absence of an effect of socioeconomic status which is in contrast to findings by others<sup>12,14</sup> is difficult to interpret in view of our understanding that early home environment plays an important role in learning experience. But since all the teachers have attended and graduated from Teacher's Training Colleges, they would presumably have had a similar level of educational attain-

ment. It may be that this approximately similar level of educational background rather than the parent's socio-economic status per se could account for the lack of effect. Several studies have shown that educational levels positively correlated with nutritional knowledge<sup>11,17</sup>. Prefontaine found that previous learning experience in nutrition resulted in higher nutrition knowledge scores among home economics teachers, health science students and mothers<sup>11</sup>.

The absence of a significant difference in knowledge scores between academic majors indicates a need to design an effective inservice nutritional health program and provide learning opportunities for physical education teachers. Physical educators are anticipated to teach health and offer counsel in Malaysian schools. Adequacy in nutritional health knowledge is necessary if the right kind of nutritional information is going to be disseminated to and good nutrition habits promoted in school children.

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