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Analysis of Nutrition Habits of the Teachers and Nurses

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Abstract: Nutritional habits are an important factor in terms of quality of life and the use of existing sources. The purpose of this study was to determine the nutritional habits of teachers and nurses. A face-to-face questionnaire survey was applied to 471 participants, 186 of whom were nurses and 285 of whom were teachers. The findings indicated that the nutritional habits of the teachers were more positive than those of nurses ($p = 0.001$). In addition, it was found that there was a significant difference between age and nutrition habits ($p < 0.001$) and that as the person aged, nutrition habit scores increased. No significant difference was detected in terms of gender ($p > 0.05$).

Key words: Nutrition habits, nutrition habits score, teachers, nurses

INTRODUCTION

Urbanization, economic development and globalization have led to transitions in nutrition with the rapid changes in lifestyle and diet. Transition in nutrition is related to the consumption of foods with high energy content (foods with low fiber-content foods, containing sugar or sweetened foods), low levels of physical activity and sedentary lifestyles (Pekcan, 2008). Balanced and sufficient nutrition is of great importance for maintaining good health and for pursuing a quality life. The relationship that has been demonstrated between unhealthy nutritional habits and many chronic diseases emphasizes the preventive effect of correct nutrition. Previous research has demonstrated that a wide range of factors can affect individual nutritional habits, including: Characteristics such as age (Oakes, 2003), gender (Oakes and Slotterback, 2001b; Kroshus, 2008; Delores, 2009), living place (Volatier and Verger, 1999; Bovell-Benjamin *et al.*, 2009), family structure, ethnic origin, cultural factors, socio-economic status, occupation, beliefs and psychological factors (Bellisle *et al.*, 1999; Gibney *et al.*, 2004). However, previous studies indicated that individuals have only a limited perception and knowledge about a healthy diet (Oakes and Slotterback, 2001a; Oakes and Slotterback, 2001b; Oakes, 2003; Oakes *et al.*, 2005). Women, in particular, tend to associate a healthy diet with the energy values of foods (Carels *et al.*, 2007). Recent years have seen a global rise in rates of obesity and obesity-related health issues (Timperio *et al.*, 2002; Thorpe *et al.*, 2004; Musingarimi, 2008; Stewart *et al.*, 2009). However, it would be a mistake to associate unhealthy or poor diet solely with obesity. In contrast, it is constantly

emphasized that insufficient energy and food intake is a factor in the development of various diseases and that dietary arrangements have an important effect on in the treatment of diseases (Baysal *et al.*, 1999).

Within Turkey, one reason for an inadequate and unbalanced diet is the common unhealthy nutrition habits, related to various factors, that prevent the most effective use of existing sources. Changes in nutrition habits are important in terms of individuals' health and the risk of diseases such as cardiovascular diseases, diabetes mellitus, osteoporosis etc (Wallace *et al.*, 2001; WHO, 2003; Ren, 2004; Sanlier, 2005; Uyar, 2007).

In order to attain the desired quality of life in the rapidly globalizing world, awareness should be raised about nutrition and the emphasis on healthy diet should be adopted as a lifestyle choice. Adequate and balanced diet is important for physiological needs throughout life and for satisfying psychological and sociological needs. For this reason, priority should be given to national policies which provide effective nutritional education (Moron, 2006). Nutrition awareness has a positive impact on an individual's nutritional preferences (Tepper *et al.*, 1997). Reliable channels of communication, which can reach large groups are required for effective educational programs (Moron, 2006).

Institutions which have a significant influence on the society are important sources for the acquisition of positive societal behaviors in terms of nutrition habits. Thus, health personnel and teachers who pioneer the society as educators can be considered as potential leaders in this role. Teachers inform their students in terms of food, nutrition, growth and development, body

image, weight control and help them acquire positive attitude and behaviors (O’dea, 2002). Nurses also have an important role in offering preventive health services and public information.

For those reasons, the it should be thought that nutritional habits and awareness of healthy diet amongst both occupational groups is of great importance. The purpose of the present study is therefore to determine the nutrition habits of teachers and nurses and to compare these two professional groups in terms of nutrition habits.

MATERIALS AND METHODS

Research design: The study was carried out in Ankara between March-September 2008. The study group consisted of 471 people, 186 of whom were nurses and 285 of whom were teachers. Initially, the aim was to include an equal number of nurses and teachers (nurses = 300 and teachers = 300, total = 600). However, as the nurses were involved in a busy working program, 200 volunteer nurses were included in the study. A further 15 teachers, 14 nurses (total 29), who initially agreed to participate, left the study during the survey process. Nurses and teachers were compared in terms of nutrition habits, in addition, the effect of gender and age in relation to nutrition habits were evaluated.

Participants: The study group comprised nurses and teachers working in Ankara, Turkey’s capital city. The participants were informed about the subject, purpose and the rules of the study. The questionnaire was administered to the volunteered participants through a face-to-face interview technique. The average age of the participants was 31.11±10.11 years. 98.4% of the nurses were female; 55.4% of the teachers were male and 44.6% of the teachers were female. Although nursing department of universities is highly promoted to encourage males to choose this profession, the number of male nurses is quite low. Nursing is still perceived as a female profession in Turkey.

Instrumentation: The data was collected between May-August 2008. In data collection, the questionnaire form was used. The gender and ages of the participants were identified as the independent variables. In order to determine nutritional habits, a scale consisting of 25 statements was developed, with reference to various previous studies (Tepper *et al.*, 1997; Sanlier and Unusan, 2007a; Sanlier and Unusan, 2007b; Beydoun and Wang, 2008). Each statement about nutrition habits was scored as follows: “always = 3”, “sometimes = 2” and “never = 1”. In negative statement (8 statements), the scoring was the reverse. The range of possible scores was between 25-75 (Tavsancil, 2006).

The pilot test: The reliability of the questionnaire was also determined by a pilot study on 50 adults. As a result of the item analysis, several test questions were modified to improve clarity. The reliability coefficient of the test, conducted after the real application, was calculated to be 0.694.

Data analysis: Statistical analysis was conducted using SPSS for Windows (version 11.0, 2001, Chicago, IL). The level of statistical significance was p<0.05. The gender, age and occupation distribution of the participants are given in percentages. For each statement about nutrition habits, the percentage distribution of the responses of the teachers and the nurses were calculated and the difference was evaluated using a Chi² test. Demographic characteristics and nutrition habit total scores t test were evaluated according to ANOVA and Pearson Correlation Coefficient (Buyukozturk, 2008).

RESULTS

The demographical characteristics of the participants:

The demographic characteristics of the participants are given in Table 1.

65.8% of the participants were female, 34.2% were male. 37.2% of the participants were between the ages of 20-23 (\bar{x} = 31.11±10.11 years). 60.5% of the participants were teachers and 39.5% were nurses (Table 1).

Table 1: Demographic characteristics of teachers and nurses (n = 471)

Demographic characteristics	n	(%)
Gender		
Male	161	(34.2)
Female	310	(65.8)
Age (year)		
20-23	52	(11.0)
24-30	175	(37.2)
31 and over	244	(51.8)
Occupation		
Nurse	186	(39.5)
Teacher	285	(60.5)

Nutrition habits of teachers and nurses: The nutrition habits of the teachers and nurses are given in Table 2. 69.1% of the teachers reported that they prefer plant oils rather than animal fat; 22.1% reported that they regularly eat fish on a weekly basis; 71.9% reported that they did not prefer to eat fast-food products instead of regular food; 42.5% reported that they always consume a minimum of 2 glasses of milk, yoghurt or 2 matchbox size pieces of cheese per day; 51.9% reported that they avoid eating food containing additives and 72.3% reported that they read the labels when buying food and beverages. These values were found to be 48.9, 11.3, 37.1, 28.5, 29.0 and 52.7% respectively in nurses and there was a statistically significant difference between

Table 2: Distribution of nutrition habits of teachers and nurses (%)

Statement	Always		Sometimes		Never		X ²	p
	T	N	T	N	T	N		
I have breakfast every day	61.1	53.2	34.0	43.5	4.9	3.2	4.64	0.098
I do not skip meals	29.5	16.7	63.2	76.9	7.4	6.5	10.79	0.005*
I prefer to eat animal products such as meat, milk and egg every day minimum for one time	53.3	38.7	36.8	46.8	9.8	14.5	9.91	0.007*
I prefer black bread made of whole-wheat/whole wheat flour rather than white bread	21.8	18.8	51.9	44.6	26.3	36.6	5.59	0.061
I prefer plant oils in food rather than fats/animal fats	69.1	48.9	22.5	42.5	8.4	8.6	22.37	0.000**
I like to eat every kind of food	60.0	47.3	30.9	43.0	9.1	9.7	7.98	0.019*
I consume minimum one portion of vegetable, fruit and salad in my daily nutrition	54.4	43.0	40.0	47.8	5.6	9.1	6.53	0.038*
I prefer to eat fast-food like hamburger and cheeseburger rather than regular food in meals	2.5	3.8	25.6	59.1	71.9	37.1	56.68	0.000**
I do not generally drink beverages such as cola and soda pop for meeting my daily fluid need	49.5	46.8	21.1	34.4	29.5	18.8	12.85	0.002*
If I feel that I put on weight, I take up physical activity (exercise)	23.2	25.3	52.3	44.6	24.6	30.1	2.84	0.241
If I feel that I put on weight, I eat less	30.9	30.6	50.2	41.9	18.9	27.4	5.25	0.072
I avoid food that contain additives	51.9	29.0	39.6	60.2	8.4	10.8	24.38	0.000**
I regularly eat fish each week	22.1	11.3	58.2	51.6	19.6	37.1	21.18	0.000**
If the bread is fresh but is moldy, I prefer to eat the fresh bread instead.	78.2	81.7	12.3	12.4	9.5	5.9	1.94	0.379
I do not eat while watching television	21.1	9.7	56.5	58.1	22.5	32.3	12.95	0.002*
I drink a minimum of 8 glasses (1.5 liters) of water a day	47.7	46.2	41.8	44.6	10.5	9.1	0.49	0.785
I eat 2 glasses of yoghurt, milk or 2 matchbox size pieces of cheese a day	42.5	28.5	42.5	55.4	15.0	16.1	9.97	0.007*
I avoid consuming alcohol	64.2	76.3	22.5	12.4	13.3	11.3	8.98	0.011*
I do not smoke	49.8	67.2	16.1	10.8	34.0	22.0	13.85	0.001*
I eat food at regular meal intervals	21.8	29.0	66.3	63.4	11.9	7.5	4.70	0.095
I read the labels when I buy food and beverages	72.3	52.7	23.5	43.0	4.2	4.3	20.41	0.000**
I do not use ketchup, mayonnaise, salad sauce etc in food	37.9	27.4	42.1	58.6	20.0	14.0	12.27	0.002*
I eat dry legumes 1-2 times a week	45.3	49.5	50.9	44.1	3.9	6.5	3.05	0.218
I eat granola, muesli etc and milk at breakfast	7.7	4.8	30.9	29.6	61.4	65.6	1.80	0.408
I do not eat the skin when I eat chicken, turkey or fish	48.1	55.4	29.1	29.0	22.8	15.6	4.12	0.128

T: Teacher, N: Nurse, *p<0.05, **p<0.001

the nurses and teachers (p<0.001) (Table 2). 29.5% of the teachers reported that they never skip meals 22.5% reported that they eat while watching television. With regard to the statement "I consume a minimum of one portion of vegetables, fruit and salad in my daily nutrition" it was found that only 54.4% of the participants answered "always" (the values in nurses were 16.7%, 32.3%, 43.0% respectively) and there was a statistically significant difference (p<0.05). for the responses to the statements "I prefer to eat animal products such as meat, milk and eggs at least once per day" and "I do not drink beverages such as cola and soda pop for meeting my daily fluid need" there was a significant difference between the teachers and nurses (p<0.05). The teachers were found to have more positive habits in terms of these statements. In terms of the statements "I avoid consuming alcohol" (p<0.05) and "I do not smoke" (p = 0.001), it was found that the nurses had more positive habits and that there was a statistically significant difference between the two groups (Table 2).

Evaluation of nutrition habit scores according to demographic characteristics: Arithmetic average and standard deviations of nutrition habit scores according to gender and occupation are given in Table 3.

Table 3: Nutrition habit scores according to gender and occupation

Variables	$\bar{x} \pm SD$	t	p-value
Gender			
Male	56.11±5.56	-1.312	0.190
Female	56.84±5.89		
Occupation			
Nurse	55.49±5.81	-3.374	0.001*
Teacher	57.31±5.66		

*p<0.05

Table 4: Correlation of nutrition habit score between age, gender and occupation (r)

Variables	Nutrition habits score
Gender	0.060
Age (year)	0.185**
Occupation	0.154**

**p<0.01

No statistically significant difference was found between nutrition habit scores and gender. Nutrition habit scores of the teachers (57.31±5.66) were found to be higher than those of nurses (55.49±5.81) and the difference was found to be statistically significant (Table 3).

It was found that there was a significant relationship between nutrition habits score and age (r = 0.185, p<0.01) and occupation (r = 0.154, p<0.01). Examination

of the relationship between professional groups and nutrition habits when the age factor was kept under control did not produce a statistically significant result ($r = -0.0109$, $p = 0.814$). This result shows that age is a more important factor.

DISCUSSION

The role of a nurse includes protecting and improving community health and the role of a teacher includes promoting positive attitudes amongst students. The appropriate nutritional habits of both these occupational groups have an important role in positively influencing wider societal nutritional habits and behaviors. In addition, the nurses, who receive health education in parallel with their occupational training, would be expected to have higher scores. Despite that, the average nutrition scores of the teachers were found to be higher ($p < 0.05$, Table 3). According to the correlation results, occupation is a significant variable in nutrition habits (Table 4). This may be due to the fact that, in Turkey, nurses generally work in 3 shifts and 24-h shift patterns, thus having lifestyle that is less conducive to taking regular meals and maintaining healthy eating behaviors; while the teachers work for a regular 6-8 h per day under more positive conditions (Bilazer *et al.*, 2008).

More than half of the teachers and nurses reported that they have breakfast every morning. Pearson *et al.* (2009) reported that parents' habit of having breakfast had a positive impact on the breakfast habits of children. Considering that the adults comprising the population of this study are parents/candidate parents, their positive habit of having breakfast is important for themselves and for their children. In a study by Berg *et al.* (2009) there was a relationship between obesity and skipping breakfast and lunch and eating at night. We can conclude that, in addition to causing insufficient and unbalanced diet, skipping meals is a negative habit posing a risk for obesity. In the present study, it was found that the majority of the participants have the habit of skipping meals (Table 2).

There is a common recognition that, in terms of health benefits, white meat should be consumed instead of red meat. However, in the present study the, statement "I regularly eat fish each week" received noticeably low scores, which indicates that this awareness of healthy nutritional choices is not reflected in the eating habits of the study group. In their studies, Yen *et al.* (2008) found that greater nutritional awareness amongst consumers led to reduced red meat consumption but did not affect white meat consumption. Previous studies indicated that there was a positive relationship between consuming fish and age (Olsen, 2003; Myrland *et al.*, 2000). Another study indicated that the community culture had a significant effect on widespread fish consumption in Vietnam (Tuu *et al.*, 2008). Although Turkey is a

peninsula and is rich in sea products and fish sources and although fish is cheaper than red meat, the present study found that only half of the participants sometimes eat fish (Table 2). This may be due to the fact that Turkish people have no habit of consuming fish and sea products. Similarly, in their studies, Yen *et al.* (2008) reported that males consumed more fish and meat than females and that meat consumption decreased with age. The fact that the teachers in the present study consumed more animal products such as meat and egg when compared to the nurses ($p < 0.05$) may be related to the fact that the majority of the nurses in the present study were female. A previous study found that adults perceived foods with high fat content, cholesterol and sodium as unhealthy and perceived the foods with high fiber, vitamin/mineral and protein content as healthy (Oakes and Slotterback, 2001a). This finding is supported by the results of the present study, in which the teachers have more positive behaviors and healthy diet perceptions than nurses in terms of their preferences for consuming daily meat, egg, milk and dairy products, vegetables and fruits and consuming liquid oil instead of fats (Table 2). The occupational duty of the teachers, which is based on encouraging their students to acquire positive behaviors may have an effect on adopting accurate nutritional habits.

The finding that the participants have very little preference for fast-food is a positive behavior. Tepper *et al.* (1997) found that individuals with greater knowledge of nutrition consume more healthy food and less fast-food. In our study it was found that the nurses preferred fast-food more than the teachers ($p < 0.001$) (Table 2). In addition, it was found that the teachers have more positive nutrition habits than the nurses (Table 3 and 5). The results of Tepper *et al.* (1997) support our findings. Since sauces such as ketchup and mayonnaise were recently introduced to Turkish cuisine, these sauces are generally consumed with fast-foods in Turkey. The finding that, parallel to higher fast-food consumption, the nurses in our study consume more sauces such as ketchup and mayonnaise (Table 2) verifies that these sauces are not widely used in traditional food, or by older people. According to the FDA, in relation to the energy consumption of American people (1200-1300 calories), an individual is recommended to eat 5-13 portions of vegetables per day (Anon, 2005). Previous studies indicated that as the vegetable and fruit consumption of an individual decreases, energy and fat intake increases (Derwnowski *et al.*, 1997; Becker, 1999; Haraldsdottir, 1999). According to a study carried out in France, fat intake was found to be high, while vegetable and fruit consumption was found to be low (Volatier and Verger, 1999). Fisher *et al.* (2002) found that vegetable and fruit consumption by parents had an effect on children's habit of consuming similar foods. Considering the results of previous studies on

recommended daily vegetable and fruit intake and the effects of vegetable and fruit consumption, the fact that 54.4% of the teachers and 43.0% of the nurses reported that they consumed these foods "always" can be regarded as a challenging result.

In a study of women, it was indicated that a two-hour increase in watching television per day increased the risk of obesity by 23.0% and every two-hour increase in sedentary work per day increased the obesity risk by 5.0% (Hu *et al.*, 2003). In another study, it was found that watching television while having lunch significantly increased the amount of food that is consumed in meal intervals in the afternoon (Higgs and Woodward, 2009). In accordance with the findings of previous studies, we conclude that an inactive life style and consumption of snacks-generally foods with high energy content are preferred while watching television- have a significant effect on the prevalence of obesity (Dogan and Yildiz, 2001). When the habit of eating while watching television was questioned in the study, it was found that the teachers gave more positive responds ($p < 0.01$), but the majority of the participants reported that they ate while watching television (Table 2).

Smoking and alcohol consumption are totally undesired habits due to their harmful effects on health. The education the nurses received may influence the finding that nurses smoked less and consumed less alcohol than the teachers. In a study of university students it was found that appetite increased after alcohol consumption and during the term of the study, parallel to the amount of consumed alcohol, BMI also increased and there was a statistically significant BMI increase in the group which drank large quantities of alcohol (Lloyd-Richardson *et al.*, 2008). The fact that the majority of the participants in both groups report that they avoid drinking alcohol (Table 2) is a positive habit that has a significant effect on maintaining body weight (within the healthy limits). In addition, smoking and alcohol consumption is more common among males. High smoking and alcohol consumption rates of the participant teachers can be associated with the fact that nearly all study nurses were females and most of the male participants were teaches. As a matter of fact, gender-based evaluation of smoking and alcohol consumption showed that males consumed such products more than females ($p < 0.05$). It shows that gender rather than profession is determinant in smoking and alcohol consumption.

As a consequence, correcting the in appropriate nutrition behaviors within society and encouraging a societal shift towards appropriate and healthy nutrition habits is only possible by conducting social education on the subject of nutrition. Educating and raising societal awareness about healthy diet is of great importance during the entire life cycle. (Anon, 1997). In today's rapidly globalizing world, educators and health-professionals have important roles in terms of attaining the desired

quality of life, by raising awareness of nutritional and dietary issues and promoting better nutrition as a healthy lifestyle choice. For these reasons, both professional groups have to be a role model for the society with their right nutrition habits.

Limitation of the study: Because the population of this study consisted of nurses and teachers in central Ankara, the results should not be generalized to cover all nurses and teachers, age groups or to the entire country. Although the reliability coefficient was found to be high, this research measured self-reported behaviors; self-reportage is subject to individual bias. However, this study pioneers further studies with higher number of participants.

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