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The effects of mother's nutritional knowledge on attitudes and behaviors of children about nutrition

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Abstract

Purpose of this study to determine the effects of mother's nutritional knowledge on attitudes and behaviors children about nutrition. This study was carried out 132 boys and 170 girls, total 302 mothers of the students in Ankara, Turkey. The inventory was given to the mothers to determine their nutritional knowledge and attitudes and behaviors about their children's nutrition. Results indicated that many of the mothers who have higher nutritional knowledge level and their children have normal weight. The mothers who have higher level nutritional knowledge feed their children more with vegetable, fruit, legumes, and less sugared drinks such as pops, juice and fast foods than the mothers who have lower level of nutritional knowledge. Also, higher nutritional knowledge level mothers avoid giving the foods which contains artificial to their children, and believe more the knowledge about nutrition-health. Mothers' nutrition knowledge level affects children's eating habits.

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1. Introduction

Healthy eating behaviors in childhood are very important. It helps prevent malnutrition, growth retardation, and acute child nutrition problems, in addition to preventing chronic, long-term health problems such as cardiovascular diseases, type 2 diabetes, cancer, obesity, and osteoporosis. Parents are mostly responsible on this subject (Nicklas, 1995; Nicklas & Hayes, 2008). Parents are effective on their children's eating behaviors and preferences. Especially, mothers are the role models of their children about eating behaviors. Therefore, it is important to determine mother's eating habits to support healthy nutrition of both child and mother. Eating behaviors of the mother are affected by some factors such as socioeconomic status, educational status, age, working position, and knowledge level of nutrition of mother (McLeod, Campbell & Hesketh, 2011; Variyam, Blaylock, Lin, Ralston & Smallwood, 1999; Vereecken & Maes, 2010). It is assumed that nutritional knowledge level of the mother could be effective on eating behaviors of their children. Consequently, the goal of this study is to determine effects of nutritional knowledge level of the mother about nutritional attitudes and behaviors of the children.

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2. Method

2.1. Procedure

This study was carried out 302 voluntary mothers of the students (mean aged 12.5 ± 1.8 years, 132 boys and 170 girls) in Ankara, Turkey. After gathering some information about students, mothers of these students were invited to the school, and the inventory was given to them to determine their nutritional knowledge and attitudes and behaviors about their children's nutrition. Also, body weight and height of the children and mothers were measured using standard measurement techniques, and Body Mass index (BMI) was calculated for all subjects. BMI 18.5-24.9 kg/m² were considered normal weight, and BMI >24.9 kg/m² was obese.

2.2. Assessment of nutrition knowledge, attitude and behaviors

A thirty items inventory was used to determine nutritional knowledge levels of the mothers. This inventory was developed by the researchers through benefiting from the questionnaires created by Erenoglu, Ayranci, & Son, (2006) and Parmenter & Wardle (1999). 15 points and lower is considered low, and higher scores of 15 points is considered higher nutritional knowledge. Also, mothers were replied the other questions which are related their child's eating habits and behaviors. The research data were collected through a questionnaire and face-to-face interviews.

2.3. Statistical analysis

The data of the study were evaluated using SPSS 16.0 package program. Results were analyzed with respect to mothers' knowledge about nutrition. For the statistical analyses of the data, tables were prepared to show mean, standard deviation and percentage (%) values. Inter group comparisons performed with chi square. A criterion p level of <0.05 was used to determine statistical significance.

3. Results

The mean age of the mothers is 37.8 ± 5.2 years old, and most of them (%90.4) is house wife. The mean of BMI in children and their mothers are respectively 18.2 ± 2.8 and 26.8 ± 8.1 kg/m² (Table 1).

Table 1. Means and standart deviations for age and anthropometric measurements of children and their mothers

Variables	Child Mean± SD	Mother Mean± SD
Age (years)	12.5±1.8	37.8±5.1
Weight (kg)	41.9±10.4	69.9±10.6
Height (cm)	150.7±12.3	162.6±8.9
BMI (kg/m ²)	18.2±2.8	26.8±8.1

Many of the mothers who have higher nutritional knowledge level and their children have normal body weight. The mothers who have higher level nutritional knowledge feed their children more with vegetable, fruit, legumes, and less sugared drinks such as cola juice and fast foods than the mothers who have lower level of nutritional knowledge. Also, higher nutritional knowledge level mothers avoid giving the foods which contains artificial to their children, and believe more the knowledge about nutrition-health. Mothers' nutrition knowledge level affects children's eating habits (Table 2).

Table 2. Attitudes and behaviors of the mothers according to their nutritional knowledge levels on their children's nutrition

Attitudes and behaviors	Nutrition knowledge levels				p
	Low		High		
	Rarely (%)	Always (%)	Rarely (%)	Always (%)	
I make my child to have breakfast	14.1	85.9	13.6	86.4	0.905
I care my child to have a meal three times in a day	9.8	90.2	4.7	95.3	0.081
I do not fry or broil when preparing foods	20.5	79.5	12.9	87.1	0.079
I don't prefer sausage, hot dog and salami for my child	33.3	66.7	17.1	82.9	0.001***
I cook legume meal two times in a week.	40.2	59.8	25.9	74.1	0.008**
I make my child to eat an egg everyday	40.9	59.1	40.0	60.0	0.873
I make my child to eat fish two times in a week	62.9	37.1	67.6	32.4	0.387
I make my child eat nuts in snack	55.3	44.7	48.8	51.2	0.264
I make my child to drink at least a glass of milk in a day	44.7	55.3	38.8	61.2	0.304
I prefer fruits, milk instead of biscuits and chocolate for my child in snacks	46.5	53.5	44.7	55.3	0.759
I make my child to eat least 1 portion of cheese everyday	32.6	67.4	21.2	78.8	0.025*
I prefer milk desert instead of pastry for my child	38.6	61.4	31.2	68.8	0.176
I make my child to eat least 3 portion vegetables in a day	51.5	48.5	35.3	64.7	0.005**
I prefer fresh fruits juice for my child	47.0	53.0	24.7	75.3	0.001***
I make my child to eat least 2 portion fruits in a day	50.0	50.0	37.6	62.4	0.032*
I prepare salads each meal for my child	50.8	49.2	35.9	64.1	0.009**
I ban ketchup, mayonnaise types sauces for my child	61.4	38.6	51.4	48.6	0.117
I ban cola, pups types beverages for my child	22.0	78.0	14.1	85.9	0.075
I don't prefer fast food for my child	19.7	80.3	7.6	92.4	0.002**
I don't reward my child with chocolate or waffle	31.1	68.9	26.5	73.5	0.381
I don't give to my child artificially flavored foods	30.3	69.7	11.8	88.2	0.000***
I don't give butter spread breads	40.2	59.8	28.8	71.2	0.039*

* p<0.05, **p<0.01, *** p<0.001

4. Discussion

Some factors such as working status, income, age, educational level and nutritional knowledge level of the mother are effective on feeding their children (Ozdogan et al., 2012; Ucar, Ozdogan & Ozcelik, 2012; Sunwoong, ChungJa, AeJung & MiHyun, 2000). It is assumed that the mothers who have true nutritional knowledge prefer right foods for themselves and for their children. Sunwoong et al. (2000) stated that there is a correlation between nutritional knowledge of the mothers and their nutrition status, nutritional habits and nutritional knowledge of their children. In other different study, it is found that nutritional attitude and knowledge scores in mothers are positively related with diet scores of their children (Vereecken & Maes, 2010).

Educational status of the mother is effective on their children's eating habits. High educated mothers' children have higher scores about healthy eating attitudes. Children of high educated mothers prefers more water, rice, bread, vegetable, fruit, meat, fish, chicken, egg and milk products than the children of middle or low educated mothers (Al-Shookri, Al-Shukaily, Hassan, Al-Sheraji & Al-Tobi, 2011). It is found in this study, the mothers who have higher nutritional knowledge eat more their children with cheese and egg than the mothers who have low nutritional knowledge (p<0.05). While there is a positive relationship between educational status of the mothers and consumption fruits of their children, there is no relationship between consumption of vegetable and candy. Mother's attitudes about fruit, vegetable and protect from cancer risk her child are related positively with fruit consumption of the child (Gibson, Wardle & Watts 1998). It is found that mother's nutritional knowledge is negatively related with snack taking behaviours of their children. Mother's nutritional knowledge has positively effect on their children's eating habits (Poh, Kathryn Tham, Wong, Winnie, Chee & Tee vd. 2012). In this study, it is found that high nutritional knowledge level mothers have higher percentiles about preparing at least 3 portion vegetables, 2 portion fruit, and salads in each meal for their children than low nutritional knowledge level mothers (p<0.05).

The more nutritional knowledge level of the mothers is increased, the more their children's dietary intake levels on total fat and cholesterol are decreased, and consumption of dietary fiber is increased (Sunwoong et al. 2000; Variyam, Blaylock, Lin, Ralston & Smallwood; 1999). It is found that high nutritional knowledge level mothers give less butter spread breads, and high fat included foods such as sausage, hot dog and salami (p<0.05). Restrictive behaviours of the mothers about having that kind of fat included foods could be the reason of their thoughts making energy level low.

Parents create environments for children that may foster the development of healthy eating behaviours and weight, or that may promote overweight and aspects of disordered eating (Scaglioni, Salvioni & Galimberti, 2008). Some families give some foods as a bribe to their children. Usually, sweet foods are used as a bribe food (Sherry et al., 2004). Also, food preferences of the parents are effective on their children's eating behaviours (Grimm, Harnack & Story, 2004; Scaglioni et al., 2008; Sutherland et al., 2008). Parents unintentionally encourage their children for obesity by feeding them in a wrong way (Clark, Goyder, Bissell, Blank & Peters, 2007). Baughcum, Chamberlin, Deeks, Powers & Whitaker (2000) pointed out that obesity prevalence is more seen in low educated mothers. Continuous increasing on fast food and beverages consumption in last times redounds the obesity risk for children (Bowman, Gortmaker, Ebbeling, Pereira & Ludwig, 2012; Yabancı, Simsek, Istanbuluoglu, & Bakır, 2009).

Both mothers and their children are in need of replacing healthy foods instead of fast foods (Boutelle, Fulkerson, Neumark-Sztainer, Story & French, 2007). Nutritional education for the mothers will positively effects eating behaviours and habits both mothers and children. Correct changes in mothers' eating habits can help having healthy nutritional behaviours. Families, especially mothers are the most important sources in teaching nutritional knowledge (Bevan & Reilly 2011; McCullough, Yoo & Ainsworth, 2004).

In this study, it is determined that having high nutritional knowledge of the mothers are positively effective on their children's eating behaviors and habits. If nutritional education is given continuously to mother, healthy nutritional habits and behaviors could be gained all family members.

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