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The Education about Breakfast and its Importance Given to Child-to-Mother in Turkey

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Abstract: This study was planned to give education to children in primary education and their mothers through their children on breakfast and its importance and to determine the efficiency of this education method in Turkey. The schools were classified as groups of experiment and control. A questionnaire form was prepared in order to determine the nutrition levels of the students and their mothers and this form was applied as pre-test and post-test. The research was conducted on 31 students between ages of 11-13 and their mothers in two private primary schools. When education was given, education techniques such as research and discussion, illustrated explanation, role-playing, painting, poster design, lyrics writing and composing and poem-writing were enjoyed. Non-parametrical test of Wilcoxon Matched-Pairs Signed-Ranks Test and Independent-Samples t-test were also used. It has been determined in the outcome of the educational activities conducted that there is a significant difference ($p < 0.05$, $p < 0.001$) between the awareness levels of both children and their mothers about breakfast and its importance. The results of this study claim that both children and their families fail to comprehend the importance of breakfast sufficiently and also they need information on accurate usage of the time.

Key words: Breakfast, child-to-mother education, nutrition education, school child nutrition

INTRODUCTION

Results of various studies emphasize the importance of having breakfast and it has been revealed various health problems occur, school success decreases, deficiencies have been seen in energy and food elements taking and also obesity can be occur in some aspects (Wyon *et al.*, 1995; Seaman *et al.*, 1997; Berkey *et al.*, 2003; Taras, 2005; Matthys *et al.*, 2007) when children do not have breakfast. It has been stated that comprehension skills and mental capacities of children who go to school by having breakfast increase (Taras, 2005; Vaisman *et al.*, 1996; Melton, 1998; Kleinman *et al.*, 2002) they feel happy and energetic and they can think and decide quickly (Unusan *et al.*, 2006). Inadequacy of nutrition information levels of individuals are shown as the basis of these problems and it is recommended to give individuals nutrition education necessity of which is underlined (Seaman and Kirk, 1995; Pollitt, 1995; Pirouznia, 2001; Powers *et al.*, 2007). The study conducted has two main purposes. The first one is to ensure that 7th grade students of primary schools and their mothers are educated for the breakfast and its importance and the second one is to determine the practicability of the method of educating the mothers through their children which was used in giving this education in the area of nutrition. It was also aimed to ascertain the effect of the education given to the children and their mothers on the information and behavior of individuals. As the foundations of habits are laid in childhood. The proper nutrition habits to be

acquired within this period shall contribute into growing up of healthy individuals. Thus, it is important to give nutrition education on breakfast and its importance and to create awareness in individuals.

MATERIALS AND METHODS

Study group: The study was conducted in two private primary schools in Kecioren District of Ankara selected in accordance with simple random sampling method. They have attended to the study willingly without signing any protocol written on Institutional Review Board's of each of two school. The schools were classified as groups of experiment and control. As the course burden and curriculum of the children at school enable that they participate into the activities of this study in a much easier way, the students of the 7th grade and their mothers were preferred. The number of students in the 7th grades of the schools taken under this study was 15 for the group of experiment and 16 for the group of control. Since the number of seventh-class students of schools involved in this pilot study are 15 in the experiment group and 16 in the control group it has been studied with 31 students totally.

Planning of the educational activities: Two weeks were planned for the pre-test and post-test, one week per each and eight hours in total were planned for the educational activities, two hours per week for 6 weeks. Two separate questionnaire forms were prepared, one for students themselves and the other for their mothers,

in line with the objective of the study. These forms contained 5 questions for determination of demographic characteristics of the students and their families, 4 questions for determination of nutrition and eating habits and 9 questions for breakfast and its importance, which is the core topic of the study. The form prepared was first applied to 15 students of the 7th grade of another school in Keciören District and their mothers as a pilot application and was used as a pre-test and post-test in the main study thereafter.

The questionnaire form prepared by the researcher was applied to the students to whom the education was given experiment groups children and their mothers as a pre-test. Educational activities were conducted thereafter. After the completion of the educational activities, the questionnaire form given at the beginning of the study was re-applied as a post-test in order to determine if there was a change in the practices of students and their mothers.

The students in the group of control and their mothers were also applied the same questionnaire forms as the pre-test and post-test in line with the starting and ending periods of the group of experiment and no education was given to them.

Implementation of educational activities: Educational activities included the breakfast and its importance, consequences encountered when breakfast is missing, and messages concerning the food that can be consumed for a balanced breakfast (Kutluay Merdol, 1999). The objective and know-how of the activity was told to the students at the beginning of the activity. The importance of the roles played by children in the study was highlighted and the students in the group of experiment were asked to convey the nutrition information they acquired through the study to their mothers and to inform the researcher of the outcomes. The nutrition education program determined was given by the researcher only to the students in the group of experiment.

The children prepared some educational material in line with the information and knowledge they acquired at school and conveyed this information and knowledge to their mothers.

Educational activities were planned and conducted as follows.

1. **Attention-drawing activities:** Attention was raised over the issue with these activities; the objective and importance of the issue to be discussed, the reason why this issue was selected and the main idea were underlined.
2. **Comprehension and finding activities:** Children conducted, in this phase, activities for gathering further information about the issue. Thus, children learned how to collect and document information which helped them acquire communication skills.

3. **Planning activities:** Children brought the information they collected to the learning setting and presented them and used them as a basis for planning the further activities. In planning activities, the researcher should discuss, with the students and implement an action plan by asking what we can do, when we can do it, who can do what, how we can get to work, who can help us.
4. **Work-doing activities:** Work-doing activities are practical activities that can be conducted about the issue at home and at school, enabling new opinions and messages to be shared with other individuals. It was also ensured that children took actions together with their mothers at school. Work-doing activities such as game-playing, role-playing, explaining and poster designing were utilized in order that they could tell what they had done and share their messages.
5. **Activities for discussion and evaluation of the outcomes:** These are the activities in which knowledge and skills of students are tested and their practices are reviewed. The researcher and students evaluated the activities they conducted. The topics were worked out by producing solutions when unexpected problems were encountered and going back to and repeating the previous steps when required.
6. **Activities for making the messages a part of the real life:** This step developed the activities conducted by students within the first four steps and included making them a part of the real life and implementation of them in daily life (Bonati and Hawes, 1992; UNICEF, 1992)

Statistical analysis: Data obtained through the tests conducted before and after the education were evaluated by means of Statistical Package for Social Science (SPSS) version 13.5 package program. Percentage frequency breakdown of the outcomes obtained through the questionnaire forms for students themselves and their families and nutrition habits of the students was conducted. Grading system was applied in statistical evaluation of the data concerning the issue of breakfast and its importance, which was the core of the education. When grading the questions answered, 1 point was given for each correct answer. The points were added thereafter, which gives us the total point of a student and his/her mother in the pre-test and post-test. The highest full point a student and his/her mother can win is the number of the questions in the questionnaire forms. A frequency breakdown was conducted for the questions about their personal information. As the number of group members is low, the in-group difference was calculated through the non-parametric test of Wilcoxon Matched-Pairs Signed-Ranks Test whereas the difference between groups was calculated by means of the

Independent-Samples T-test and the significance level was taken as $p=0.05$, $P=0.001$ and analysis was made accordingly (Ergun, 1995; George and Mallery, 2000).

RESULTS

Background information: The group of experiment consisted of 15 while the group of control consisted of 16 students and their mothers. Information about the students participating into the study and their mothers are shown in (Table 1).

Nutrition practices and education activities: The rate of students who stated that they have meal regularly at the pre-test are too low in both groups before education but it has been stated that half of experiment group (53.38%) started to eat regularly after education, there hasn't been any change in control group (Table 1).

It has been observed an increase on the rate of students consuming food desirously in the experiment group, but there has not been any change in the control group at the post-test (73.3%). The rate of students formed balanced breakfast menu have increased twice times according to the pre-test. While the rate of students who stated that they have breakfast regularly in the experiment group are low at the pre-test (40.0%) it has been observed that the number of them increased at the last test (73.3%). Students declared their reasons for not having breakfast as getting up late in the morning and their concerns for being late for the school (Table 2).

It was observed that the eating habits and food-consumption levels of mothers participating into the study developed positively after the education compared to that before the education in addition to that the number of those always having breakfast increased (Table 3).

As a result of the education given, when there is a comparison between the total points of the students and their mothers in the group of experiment and the total points of those in the group of control, it is observed that there is a difference between the groups ($p<0.05$, $p<0.001$) (Table 4).

When each group is evaluated internally, it is achieved that the post-test points of the students in the group of experiment and their mothers increased compared with the pre-test points. Whereas there is no change between the pre-test and post-test results of the students in the group of control (Table 5).

DISCUSSION

The method of education of mothers through their children on breakfast and its importance has been a very effective practice in this study. Not limiting the educational activities only to classrooms, blackboards and books and using many activities which increase the permanence of the information and knowledge acquired

Table 1: Demographic characteristics of students (n = 15, n = 16)

Characteristics	Group of experiment		Group of control	
	N	%	N	%
Age (Year)				
11	-		1	6.25
12	5	33.3	7	43.75
13	10	66.7	8	50.0
Sex				
Male	9	60.0	7	43.75
Female	6	40.0	9	56.25
Educational level of mother				
Primary School	3	20.0	-	
Secondary School	3	20.0	3	18.75
High School	7	46.7	6	31.25
Faculty	2	13.3	7	43.75
Educational level of father				
Secondary School	6	40.0	1	6.25
High School	6	40.0	7	43.75
Faculty	3	20.0	8	50.0
The number of children in the family				
Single child	1	6.7	-	
Two	7	41.2	8	50.0
Three	6	40.0	5	31.25
Four and more	1	6.7	3	18.75

all together helped continuity of students' interest (Pirouznia, 2001). In a study where role-playing was used as a means of nutrition education, it is stated that positive developments took place in nutrition behaviors of school children (Parker, 1997). It is underlined that the nutrition education schedule developed by Yannis *et al.* (1997) for primary school students was effective on students in short term and such kind of education schedules should be made sustainable in order to transform such a change of students into permanent behavioral patterns.

As the state of students having meals desirously is analyzed, it is observed in the group of experiment that there is an increase in the post-test compared with the pre-test. It has been found out that the findings of the study conducted here are similar to those of the studies of Gibson *et al.* (1998) and there is a correlation between the nutrition information level and food-consumption level of the children. It is stated in the research conducted by Warwick *et al.* (1999) that an overwhelming majority of students do not consume each type of food desirously. Lozano and Ballesteros (2006) and Matthys *et al.* (2007) have stated that there is relation between quality of nutrition consumed at breakfast and success at school. It has been suggested that there should be at least one of cereal products, fruits, vegetables or their water, milk or its products at the balanced and qualified breakfast. Also Utter *et al.* (2007) has stated when children neglect breakfast frequently, they prefer to consume snack food instead of fruit and vegetables.

It has been figured out in the pre-test that nearly half of the members of the groups of experiment and control do not have regular meals. It is stated in the studies conducted by Berkey *et al.* (2003) Kelder *et al.* (2003)

Table 2: Habits of children and breakdown of nutrition practices (n = 15, n = 16)

	Group of experiment				Group of control			
	Pre-test		Post-test		Pre-test		Post-test	
	N	%	N	%	N	%	N	%
State of food-consuming								
Consuming desirously	4	26.7	10	73.3	5	31.3	5	31.3
Not consuming desirously	-		-		3	18.7	3	18.7
Sometimes consuming	11	73.3	5	33.3	8	50.0	8	50.0
The order of eating								
Eating regularly	6	40.0	8	53.3	6	37.5	7	43.7
Not eating regularly	5	33.3	2	13.3	-		-	
Sometimes eating	4	26.7	5	33.3	10	62.5	9	56.3
State of having breakfast								
Always	6	40.0	11	73.3	10	62.5	9	56.3
Sometimes	4	26.7	4	26.7	1	6.2	7	73.7
Never	5	33.3	-	-	5	31.3	-	-
The reason why not having breakfast *								
Getting late to school	3	33.3	3	75.0	5	83.3	6	85.7
Having it at school	2	22.2	2	50.0	3	50.0	5	71.4
Not feel like having it	2	22.2	-	-	6	100.0	6	85.7
Getting up late	4	44.4	-	-	2	33.3	3	42.8

*Total of never and sometimes and students marked more than one choices (% = N x100/ Total N)

Table 3: Habits of mothers and breakdown of their nutrition practices (n = 15, n = 16)

	Group of experiment				Group of control			
	Pre-test		Post-test		Pre-test		Post-test	
	N	%	N	%	N	%	N	%
State of food-consuming								
Consuming desirously	7	46.6	10	66.6	10	62.5	9	56.2
Not consuming desirously	2	13.3	2	13.3	2	12.5	2	12.5
Sometimes consuming	5	33.3	4	26.7	4	25.0	5	31.2
The order of eating								
Eating regularly	6	40.0	8	53.3	5	31.2	6	37.5
Not eating regularly	4	26.7	3	20.0	4	25.0	3	18.7
Sometimes eating	5	33.3	4	26.7	7	43.7	7	43.7
State of having breakfast								
Always	5	33.3	9	60.0	7	43.7	8	50.0
Sometimes	5	33.3	4	26.7	4	25.0	4	25.0
Never	5	33.3	2	13.3	5	31.2	4	25.0
The reason why not having breakfast *								
Getting late to work	4	40.0	3	50.0	4	44.4	4	44.4
Having it at work	2	20.0	2	33.3	2	22.2	3	37.5
Not feel like having it	2	20.0	-	-	1	11.1	-	-
Getting up late	2	20.0	1	66.7	2	22.2	2	25.0

* Total of never and sometimes and mother marked more than one choices (% = N x100/ Total N)

Table 4: Ranks of the total pre-test and post-test points gained by groups

Group type		Pre-test	Post-test	Z	p
Experiment	Child	0.00	4.50	2.50	0.011*
	Mother	0.00	7.50	3.32	0.001**
Control	Child	0.00	1.00	1.00	0.317
	Mother	0.00	1.50	0.000	1.000

*p < 0.05, **p = 0.001.

and Zullig *et al.* (2006) that children and adolescents do not have regular eating habits and meal-skipping is very common among students, which supports the results of

this every study. Another study also points out that especially young girls of higher income group do not like to have breakfast or eat together with their families and tend to consume snack food in general (Barker *et al.*, 2000). This study reveals that habit of neglecting breakfast is common among children. Studies made in before support this finding. Also in the studies of Roseman *et al.* (2007) and San Juan (2006) have been expressed neglecting of it is common.

Basiotis *et al.* (1999) have found out in the outcome of a study they conducted in schools implementing nutrition education curriculum in two different regions, from low

Table 5: Evaluation results of total points-in-average of children and their mothers' knowledge

Group Type			N	X	SD	T	P
Group of Experiment							
Child and Mother	Pre-test	Group of experiment child	15	2.66	0.617	3.207	0.003*
		Group of experiment mother	15	3.46	0.743		
	Post-test	Group of experiment child	15	4.86	1.846	3.313	0.003*
		Group of experiment mother	15	6.73	1.162		
Groups of Experiment and Control							
Child	Pre-test	Group of experiment child	15	2.66	0.617	1.296	0.205
		Group of Control child	16	2.31	0.873		
	Post-test	Group of experiment child	15	4.86	1.846	4.761	0.000**
		Group of control child	16	2.37	0.957		
Groups of Experiment and Control							
Mother	Pre-test	Group of experiment mother	15	3.46	0.743	2.857	0.008*
		Group of control mother	16	2.62	0.885		
	Post-test	Group of experiment mother	15	6.73	1.16	11.113	0.000**
		Group of control mother	16	2.62	0.885		
Groups of Control							
Child and Mother	Pre-test	Group of control child	16	2.31	0.873	1.005	0.323
		Group of control mother	16	2.62	0.885		
	Post-test	Group of control mother	16	2.37	0.957	0.767	0.449
		Group of control mother	16	2.62	0.885		

*p < 0.05, **p < 0.001

and high income groups, that 19% of children from lower income group 19% have their breakfast at school, 14% of them do not have breakfast at all and 67% of them have their breakfast outside the school. Speaking of the students from the higher income group, 2% have their breakfast at school, 16% do not have breakfast at all and 82% have their breakfast outside the school. Another study conducted in schools from different income groups where breakfast is available and not, shows that children from lower income level tend to skip the meal of breakfast more, which can be in correlation with the income level (Hunter, 1994).

It is stated that various studies on the reasons why students do not have breakfast produced similar results. And found out that students list their excuses as shortage of time and not feeling hungry in the morning (Melton, 1998; Shaw, 1998; Redden, 2002; Chitra and Reddy, 2007). It has been figured out in this study that students do not have breakfast due to the fact that they get up late and have concerns over getting late to school. This study also shows that there is an increase in the percentage of having breakfast of both students and their mothers after an education given. Contento *et al.* (1993) state in their studies that there is a great influence of mothers on food-consumption and food-selection of their children. Another study shows an important correlation between the nutrition information levels of mothers and nutrition information and knowledge of children (Crowson *et al.* 1995; Unusan and Sanlier, 2007) Our study reveals that pre-test points of mothers and children in the groups of experiment and control are similar to each other.

Implications: The results obtained through this study have shown that this education method can be easily used in the field of nutrition. Because children have

learned by enjoying and they have had no difficulty while transferring their knowledge to their mothers. This pilot study can form a base for planning researches towards much bigger groups by using child-to-mother education method. Results of this study show that neither children nor parents are sensitive enough about having breakfast, and along with this it makes us think that they need information about using time.

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