The study of primary schoolchildren eating breakfast status in Ilam: A pilot study

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Abstract

Introduction: Breakfast is repeatedly called to as the most important meal of the day and has positive effects on nutritional profile, cognitive activities and disease prevention in schoolchildren. The aim of this study was to assess the eating breakfast status in a sample of primary students of Ilam city.

Materials and methods: Participants of this cross-sectional study were 298 schoolchildren grade 4th, 5th and 6th from 8 primary schools of Ilam city. Data were collected by researcher-made self-report brief questionnaire and were analyzed using IBM SPSS statistics data editor.

Results: The subjects included 148 boys (49.7%) and 150 girls (50.3%) from eight primary schools. The majority of sample (35.9%) educating in 4th grade and 54.0% of sample were living in the inner city areas. The results showed that 32.2% of study schoolchildren skipped breakfast. There was a significant difference between boys and girls breakfast habit, ($P<0.018$). Also, the results revealed that boys (47.22%) more likely to skip the breakfast than girls (23.07%) in outskirt, ($P<0.004$). But, there was no significant difference between boys (30.26%) and girls (27.05%) to breakfast skipping in inner city, ($P=0.728$). Furthermore, lack of appetite and breakfast not ready at home reported as main reasons for not eating breakfast. As with this study results, breakfast eaters usually ate more bread (76.5%), tea (69.8%) and milk (53.7%), But ate less fruits/vegetables (11.1%), fruit juices (13.4%) and breakfast cake (14.4%).

Conclusion: With attention to high rate of skipping breakfast in this study sample and also weak quality of breakfast in breakfast eaters, it is needed to conduct the schools health promotion programs to encourage students to eat healthy breakfast.

Keywords: Breakfast Consumption, Primary Schoolchildren, Ilam

Introduction

Breakfast has positive effects on cognitive activities, nutritional status and prevention of chronic diseases, (1-4). Breakfast is especially important for schoolchildren. The schoolchildren need for adequate energy and nutrients due to their growth. Approximately one fourth of the age-specific daily recommended energy and nutrients are expected to be provided through breakfast, (6-8). In spite of the

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beneficial properties of breakfast, many schoolchildren do not eat breakfast regularly. The studies that have been conducted in Iran, shows that breakfast skipping is very prevalent among Iranian schoolchildren (from 13.7% in Tehran to 47.5% in Zahedan), (9-11). Preferably, breakfast should contain the products from all of the five food groups (Disc of five): 1) fruit/fruit juice group, 2) grain group (bread or cereals), 3) dairy group (milk and milk products, cheese, and eggs), 4) fats group (oils and margarine), and 5) liquids group (water, tea or coffee), (5). Beforehand the planning of any interventions to promote the breakfast eating behaviors in schoolchildren, illuminate the casual factors behind breakfast eating behaviors is needed. There are no study has been done in Ilam city about the breakfast consumption status in schoolchildren. Therefore, the purpose of this study was to determine the status of eating breakfast in a sample of primary students in Ilam city.

Materials and methods

The study and participants: Two hundred and ninety-eight schoolchildren grade 4th, 5th and 6th from 8 primary schools of Ilam city participated in this cross-sectional study. So that, four public schools from inner city and four public schools from outskirt (two girls school and two boys school from each area), were selected. Educating in 4th, 5th, and 6th grades and satisfying to participate in the study were the main inclusion criteria. Research Ethics Committee of Tarbiat Modares University (TMU) approved the study.

Measures: Data were collected using researcher-made brief questionnaire. The brief questionnaire includes 6 items, so that 2 items about the gender and students grade, one item measured the eating or not eating breakfast on the day of data collection (Do you eat breakfast today?), one item on asking students on how many days in the past seven days they ate breakfast (During the past 7 days, how many days did you eat breakfast?), one item on the main reason for students not eating breakfast (What is your main reason for not eating breakfast?). In the last item the food frequency method was used to measure the breakfast quality. Students were asked to demonstrate, on a list of the 5 food groups, from which of the groups they usually ate any food items (e.g. bread, tea, fruit or milk) .

Statistical analysis

Data were analyzed using IBM SPSS statistics data editor. Descriptive statistics were used to describe subjects' characteristics and chi-square (χ^2) analysis was used to assess the significance of association between breakfast habit and potential correlates. P values of <0.05 were considered to be statistically significant .

Results

The sample included 298 schoolchildren boys (49.7%) and girls (50.3%) from eight primary schools. The majority of participants (35.9%) educating in 4th grade and 54.0% of participants were living in the inner city areas. As shown in Table1, 32.2% of study subjects skipped breakfast. Also, results showed that 13.1% of the schoolchildren had not eaten anything at breakfast the morning before completing the questionnaire (Table 2). There was a significant difference between boys and girls breakfast habit, ($P<0.018$). Albeit, there was no significant difference between schoolchildren breakfast from inner city and outskirt ($P=0.213$), the results revealed that boys (47.22%) more likely to skip the breakfast than girls (23.07%) in outskirt, ($P<0.004$). But, there was no significant difference between boys (30.26%) and girls (27.05%) to breakfast skipping in inner city, ($P=0.728$). Furthermore, the results showed that boys (47.22%) from outskirt more likely to skip the breakfast than boys (30.26%) from

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inner city, (P<0.043). But, there was no significant difference between girls (23.07%) from outskirt and girls from inner city (27.05%) to breakfast skipping, (P=0.705). Moreover there was no significant difference between schoolchildren breakfast habit from inner city or outskirt and each of the educational grades, (P=0.182).

Table 1. Characteristics of 298 primary students of Ilam city by breakfast eating habit.

Characteristics	N	Breakfast eaters	Breakfast skippers	P value
Total [a]		67.8	32.2	
Sex				
Boy	148 (49.7)	61.4	38.5	<0.018 [b]
Girl	150(50.3)	74.6	25.3	
Educational Grades				
4td	107 (35.9)	71.9	28.0	0.182 [b]
5th	100(33.6)	70.0	30.0	
6th	91(30.5)	61.5	38.4	
City area				
Inner city	161(54.0)	71.4	28.5	0.213 [b]
Outskirt	137(46.0)	64.2	35.7	

Data are shown as number or percent.
[a] Given as row percentage.
[b] Differences between breakfast eaters and skippers analyzed using χ^2 test.

Table 2. Absolute and relative frequency of students' breakfast consumption and main reasons for not eating breakfast.

Characteristic	N (%)
Do you eat breakfast today?	
Yes	259(86.9)
No	39(13.1)
During the past 7 days, how many days did you eat breakfast?	
Never	15(5.0)
One day	11(3.7)
Two days	6(2.0)
Three days	14(4.7)
Four days	31(10.4)
Five days	10(3.4)
Six days	9(3.0)
Always	202(67.8)
What is your main reason for not eating breakfast?	
Lack of appetite for eating breakfast	64(21.5)
Not ready breakfast at home	36(12.1)
Not ready favorites breakfast	3.(10.1)
Lack of time for eating breakfast	28(9.4)
Being in diet/ Not weight gain	28(9.4)
Being boring the breakfast	24(8.1)
Other reasons	14(4.7)

Data are shown as number or percent.

Frequency and percentage of schoolchildren breakfast eating/skipping and main reasons for not eating breakfast are shown in Table 2. As shown, 13.1% of study subjects reported that they have come to school without breakfast consumption. Also, totally 32.2% of subjects skipped the breakfast at last for one day during the past 7 days. Furthermore, "lack of appetite for eating breakfast" (21.5%) and "breakfast not ready at home" (12.1%), reported as main reasons for not eating breakfast. As with this study results, breakfast eaters usually

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ate more bread, tea, milk and jam (76.5%, 69.8%, 53.7% and 52.3% respectively). But, ate less chocolate, fruits/vegetables, fruit juices and breakfast cake (9.4%, 11.1%, 13.4% and 14.4% respectively).

Table 3. Absolute and relative frequency of food items that study subjects usually consumed at breakfast.

Food items	N (%)
Fruits & vegetables	33(11.1)
Fruit juices	40(13.4)
Milk	160(53.7)
Cream	123(41.3)
Cheese	146(49.0)
Breads	228(76.5)
Tea	208(69.8)
Breakfast cake	43(14.4)
Chocolate	28(9.4)
Butter	115(38.6)
Egg	125(41.9)
Jam	156(52.3)
Honey	149(50.0)
Nuts	87(29.2)
Other	53(17.8)

Data are shown as number or percent.

Discussion

The results of this study showed that 32.2% of schoolchildren skipped breakfast. Thus, these students skipped breakfast at least once in the previous 7 days. Of these, 5% have never eaten breakfast. Also, findings showed that 13.1% of the schoolchildren had not eaten anything at breakfast the morning before completing the questionnaire. Similar to present study findings, Cheng et al (2008) in their study reported that 30.5% of primary 6 schoolchildren skipped breakfast at least once in the previous week (12). Also, approximately 19% of schoolchildren in Raaijmakers et al (2009) study and 12% of Shaw et al (2009) study participants skipped breakfast (5, 13). However, only 5% of subjects in Tin et al (2011) study usually skipped breakfast (1). In studies that have been carried out in Iran, depending on the characteristics of the study population, various rates of breakfast skipping in schoolchildren have been reported. Some of these studies, measured the breakfast in the morning before completing the questionnaire and others assessed the frequency of breakfast consumption over a previous week. Generally, the results of these studies indicate that in Zahedan, Ardabil, Semnan, Tabriz, Langrood, Urmia, Tehran and Qazvin, respectively 4.6%, 16.8%, 4.4%, 1.4%, 8%, 15.2%, 7.9% and 10.5% of students come to school without eating breakfast. Also, the rate of Iranian irregular eating breakfast is different (47.5% from Zahedan to 13.7% in Tehran), (14, 9-11).

The results of present study showed that boys (38.5%) significantly more than girls (25.3%) do not eat breakfast, ($P<0.018$). There are a few studies that have reported similar results with the results of our study (14, 15). However, most studies show that girls more than boys skipped breakfast (14-18). Also, based on the results of this study boys living in outskirt are significantly less likely to eat breakfast than their counterparts were in the inner city, while there was no significant difference between girls on this respect. It seems that family structures and socio-economic status play a role in the development of the difference (1, 19 - 21). Although, further researches are needed to more understand about this matter in the future.

The most important reasons given for breakfast skipping in this study were breakfast not ready (not already a favorite breakfast/ no one to prepare food) (22.2%), not being hungry (lack of appetite) (21.5%), and lack of time (waking up too late) (9.4%). Similarly, over two decades ago, Bidgood et al (1992) found that the most common reasons given for breakfast skipping were not like to eat particular meals and lack of time. Also, Singleton et al (1982) reported that the most common causes given for skipping the breakfast were no time (43%) and not being hungry (42%). But, being in diet or weight loss and food not being available were less common reasons, (22). Moreover, Rezakhani et al (2010) found

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that the most important reasons for breakfast skipping were waking up too late, food not being available at home and apathy to eating breakfast (14). With attention to the stated reasons for not eating breakfast in this study and other similar studies, the role of social cognitive determinants of schoolchildren's eating behaviors notes. Several studies have examined the social cognitive determinants of eating behaviors such as schoolchildren eating breakfast (23-26). According to the study, factors such as students perceived social support (eg, support of family, teachers and friends), the use of self-regulation strategies (such as goal setting), together with the promotion of the values and expectations of the outcome of proper eating behaviors can lead to promote children eating behaviors (23, 24). Since parental attitudes, behaviors and their lifestyle plays an important role in the creation, maintenance and promotion of healthy behaviors in children, they can create a supportive environment at home (such as providing breakfast, encourage children to eat breakfast and go along with the children during breakfast), set family rules and goals (like the time to eat dinner, sleep-wake timing, set meal plan for breakfast with participation of children) improve their children's breakfast consumption behavior (23-25).

Although, the frequency of breakfast eating is a main issue in students' nutrition, the quantity and quality of the breakfast is also very important. It is recommended that breakfast had better contain the products from all of the five food groups (5). According to the study, food items eaten for breakfast, breads (76.5%), tea (69.8%), milk (53.7%), jam (52.3%), honey (50.0%) and cheese (49.0%), usually, more than any other food items by the students participating in this study were used. Also, chocolate (9.4%), fruits and vegetables (11.1%), fruit juices (13.4%) and cakes (14.4%) were less consumed. Similarly, Karimi et al (2008) found that bread, tea and cheese had the highest consumption and milk, honey, eggs, fruits and juices are consumed less (10). Also, in Rezakhani et al (2010) study, subjects consumed bread, cheese, cream and butter frequently more than milk and nuts (14). Moreover, Raaijmakers et al (2009) found that consumption of bread, milk and butter to more students were reported, but the consumption of chocolate, cheese, juices and tea were lower (5).

Studies show that students who do not eat breakfast regularly, have a worse nutritional profile and are at risk to vitamins, minerals, and protein and energy deficiency than students who eat breakfast regularly. In addition, students who skipped breakfast are more exposed to unhealthy food intake and subsequent weight gain and obesity (27, 28). However, consideration to the quality of food breakfast and eat a variety of food items, including all five food groups at breakfast is essential. Though, breakfast eaters consumed some food items such as bread, tea, milk, jam and cheese commonly, but; consumption of fruits, vegetables and nuts is required to provide the needed vitamins and minerals for the growth of schoolchildren.

The results of present study showed that missing breakfast is a major nutritional problem in schoolchildren studied. The main reasons reported for not eating breakfast were lack of appetite, lack of time and breakfast not ready. Also, the results showed that study participants less use the all five food groups, including fruits, vegetables and nuts. This study provides implications in the field of health promotion. With attention to high rate of skipping breakfast in present study subjects, it is essential to manage the health promotion programs in schools to encourage students to eat healthy breakfast regularly. Furthermore, the quality of breakfast should be considered in the health promotion programs. Also, further research is necessary to assess social

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cognitive determinants of breakfast behavior in schoolchildren .

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