

STUDY OF STUDENTS PREFERENCE AND SATISFACTION ON MEALS SERVED BY CANTEEN OF ELEMENTARY SCHOOL IN BENGHAZI

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Conflicts of Interest: Nil

ABSTRACT:

This study investigated the food preferences of Libyan elementary schools' students in Benghazi city. The survey was conducted by means of a questionnaire distributed to 7th and 9th grade elementary school students (743 boys and 1528 girls) in Benghazi covering all the three geographical zones "Albrika , Al-salawy and City Center".

The results of this study were as follows: students in Benghazi city were eating their breakfast whether at school or at home. Most students had high preferences and satisfaction to the meals that presented by schools canteen, however, some of students had their meals at home. As more than half of the students usually consumed breakfast at regular time, while the rest of students were not. . Students shows were having breakfast is more concentration and intelligent than with those haven't.

In summery, food consumption patterns of children and adolescents becomes an essential factor to promote and ensure a proper growth and development, especially in elementary school-age children. students can access proper nutrient supply through a well-planned menu which lead the students to actively participate the school meal program. Therefore, the school meals should provide enough nutrients and a realistic menu plan for the physical development and health of students.

Introduction

Adolescent is transitional stage of lifecycle linked of childhood and adult. It has special character including biological changes such as an increased growth rate, changed body composition and achievement of sexual maturity (1).

Nutrition intakes are important contributing in the human health and wellbeing and has greater concern role in childhood and adolescence. It has special direct effect on children's health due to their physical and mental growth as well as cognitive development (1). Quality of children's and adolescents' diet has become a major concern (2). The majorities of children do not meet recommended standards of dietary guidelines and are devoid of healthy dietary habits, however, the most children not only grow up by low serving of fruits and vegetables but also by higher consumption of soft drink (2).

Most adolescent schools were busy schedule leading to skipping meal specially breakfast and increase frequency of eating out especially fast food(1) .These food behaviors' may set in train unhealthy eating trends for adult life and contribute to a number of health problems over past decade the diet quality of adolescence has high energy intakes from fast food ,soft drink and salty snack with low fruits and vegetables . This trend will increase the prevalence of obesity among adolescence (1,3).

Although many studies have examined the dietary intake of adolescents, however little information on the stability of dietary patterns in adolescents is available (3). Studies of food pattern in the world were confirmed that the dietary pattern and sedentary life style are the major health problem .and life threat to present and future (3). few studies have examined the dynamic patterns in urban low-income African-

American adolescents' intakes. . The dietary data collected from 181 African-American adolescents using FFQ and follow-up for 1 year. The result shows Adolescents who tracked high intakes of energy, fiber, fried food, and snacks were less likely to track high BMI. Decreased energy and snack intakes were negatively related to tracking of high BMI (4). Food composition trend are vary according to gender. Study cross number of countries were shows the women food pattern more healthier than male. Women are more likely to consume low fat food, more fruits, vegetables and fiber with limited salt than men (5). Similarly , British and Australia adolescent girls preferred to consumed more vegetables and fruits than boys whereas the boys tend to consumed more dense nutrients(6). Another study was done in Spanish to analyze the food pattern among children and young people and their relation between socio-graphic and lifestyle factors(7). The study demonstrates that consumption of fruit and vegetables was low, Snacky pattern was characterised by more frequent and higher consumption of bakery products sweets, salted snacks and soft drinks. Indian study was examined food composition pattern of adolescent aged 14-16 years (8). Study were used self-administered, semi-quantitative for 59-item meal-based food frequency questionnaire (FFQ) Study shows Indian adolescents reported poor food consumption patterns. Over one quarter (30%) reported no consumption of vegetables and 70% reported eating three or more servings of energy-dense snacks, on the previous day. Nearly half of the respondents (45%) did not consume any servings of fruits and 47% reported drinking three or more servings of energy-dense beverages (8). To date, little is known about the food intakes of Libyan adolescents. Present research was therefore designed to study the food preferences of elementary schools students in Benghazi during 2013 as well as to identify student's satisfaction of food served at school canteens.

Subjects and Method

Study Design, Setting and Subjects

A cross-sectional study on Libyan elementary schools' students in Benghazi city was carried out during March 2013 to December 2013 after obtaining permission from the ministry of

education in Benghazi. Target group were the students from 7th to 9th grade located within the city of Benghazi covering all the three geographical zones "Alberka, Al-salawy and City Center". There are 56 elementary schools (Alberka area) 24 elementary schools (City Centre area) and 38 elementary schools (Al-salawy area) review table (1.1).

There were a total of student registered in grade 7th-9th from three selected areas with 105 elementary sampled schools in the beginning of the school year 2012-2013 (Benghazi ministry of education unpublished report 2012-2013) 30 elementary schools choice contained a total of students across three grades most of the elementary schools in Benghazi were uni-sex schools, review table(1.2).

A sample size of 2271 students (Boys (n=743) and girls (n=1528) approximately, 32.7% and 67.2 % respectively was represented for the study. All students with in the age group (12-15) years were eligible to participate in the study. Students were briefed about the purpose of the study and were explained about the manner in which the questionnaires were to be filled up none of the students approached refused to participate in the study.

Grade 7th represented 33% of total students while grad 8th and grad 9th represented 31.8% and 35.1% of total students respectively Alberka had the higher representation with 48.3 % of total students while Al-salawi and Benghazi central represented 35.2% and 16.4 % of total students respectively.

Data Collection

Self administered questionnaire was used to collect personal information of respondents. The questionnaire included socio-economic characteristics, nutrition behaviour includes dietary pattern (number of meals, fast foods, snacks, meal timing and skipped meals, food choice reasons for fast foods and snacks and following a diet regimen) in addition Cafeteria data (know if they were school follow any guide to healthy eating) review questionnaire (see appendix)

The purpose of reducing the error of data collection the researchers has been trained about

the method of collocation of data and how to handle the data collection and data entry into computer package for analysis to used program spss.

Results

The study sample consisted of 2271 students (mean age 15years) with 33% boys (n =743) and 67 % girls (n = 1528), predominantly between the ages 14-15 years old (56).In terms of perceived economic status, more than half of the students (60 %) belonged to families had income more than 500 LYD/ month, while 8 % and 25 % were from 350-500 LDY/month respectively, and 7% from the students families had income less than 200 LDY

Most of students had parents with some level of formal education. Illiteracy or just being able to read or write was (23%).Fathers with a university or technical degree was 38% while 21 % and 18 % had a school level education: elementary and secondary level respectively. Similarly a high percentage of mothers had elementary (27 %) and secondary level or its equivalent education (25 %). Mothers with a university level degree were 26 %. Figure(1) and (2)

More than half of the students usually consumed breakfast at regular time (69%) with 31 % are not. (40%) said that they take their meals at home and school,17% at school and 12% at house. a trend similar for both boys and girls.

Around 41 % of students were preferring the meals that presented by schools canteen .36% of students were depend on canteen meal, 35% of students who did not depend on the canteen meals and 29% of students who sometimes depend on the canteen meals. Nearly 52% of students satisfaction about posture dietetic to canteen and 48% of students no satisfaction about posture dietetic to canteens. Table(1) .Although 100% of students considered the school park as not an appropriate area for having their meal

Regarding an association of having breakfast and its affecting on student concentration 59% were affecting and 41 are not. Figure(3)

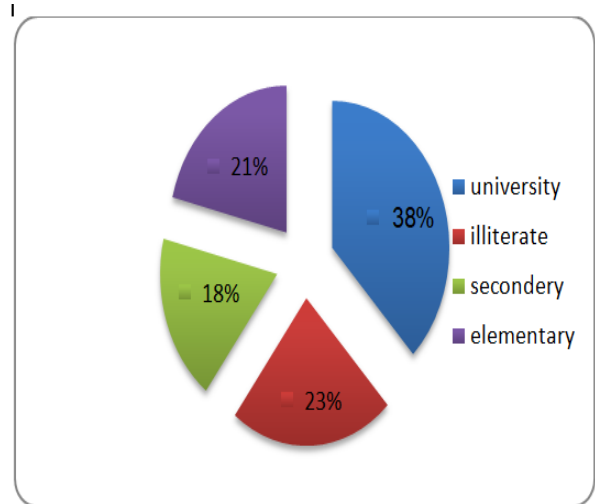


Figure 1: Percentage of student's father educational level.

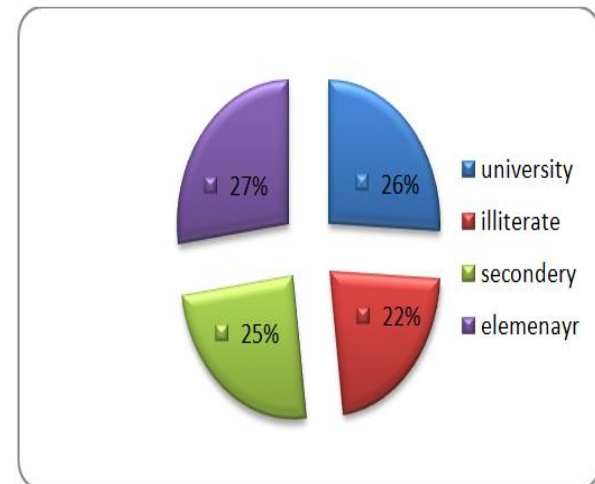


Figure 2: Percentage of student's maternal educational level.

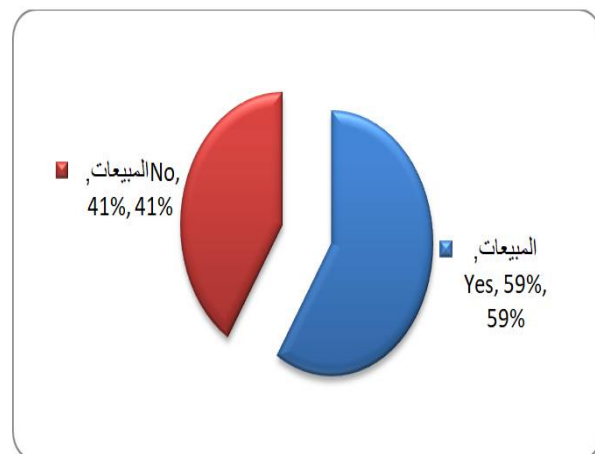


Figure 3: Percentage of students who are having the breakfast and it's affecting on their concentration

Table 1: Satisfaction students about posture dietetic to canteen.

Satisfaction students about posture dietetic to canteen.	Percentage %
Yes	52%
No	48%

Across all schools, the total number of sweets available in canteens, Percentage of sandwich available in canteens and fluid illustrated in table (2) ,(3) and (4).

Table 2: Number of sweets and nuts available in canteens.

Percent sweets and nuts available in canteens.	Number school from 30 schools to study
Chocolate	30
Chocolate Biscuit	30
Cake	30
Candy	30
Lollypop	30
Patoto foil salted	30
Jujube	30
Iced beverage	14
Corn flax with chocolate milk	6
Biscuit	5
Nut	1

Table 3: Percentage of sandwich available in canteens.

Percent sandwich available in canteens.	Percentage %
Egg	34.3%
Pizza	3.30%
Tuna	96.6%
Haraime	76.6%
Bean	73.3%
Cheese	3.3%
Sardine	13.3%
Hashed meat	50%
Chickens	26.6%

Table 4: Number of fluid available in canteens.

Percent fluid available in canteens.	Number school from 30 schools to study
canned Juice	30
Water	29
Cola	24
Coffee/tea	10
Milk	10

Discussion

Dietary intake data for children and adolescents are critical to guide appropriate interventions to improve their health and growth.

This study was conducted to identify the food preference of elementary student schools in Benghazi. there were several studies covered the same topic.

The study finding where amajority of students had regular breakfast meal at home.

According to the study in the United kingdom 2011, schools have the potential impact by providing to make healthful and affordable breakfast options for children who do not eat breakfast at home(9).

There is an increasing trend towards the consumption of processed foods, especially in developing countries. Foods such as bread, canned food, sweets, soft drinks, cookies, sweetened beverages, , cheese, and canned foods, (10) which are high in sugar, saturated fat, sodium and salt were preferred especially by the schools children (11) . School canteens that stock foods with a high energy density further increase the consumption of these foods (12). study in Bahrain shows that fruit and vegetable less consumption , while soda drinks were consumed daily by 50% of the schoolchildren (13) .In present study more than half of the students satisfied with the canteen food service and nutrition program over all. The extent to which schoolchildren were consumes high-energy foods such as chocolates, biscuits, cake and Patoto foil salted was provided in all schools canteen. These foods are eaten mainly away from home and make a large contribution to the overall diet.(14)

In comparison study by 2002 National Children's Nutrition Survey to our study, food choices among students using the school food service in New Zealand shows there weren't associations between canteen use and consumption of biscuit (fast food canned which selling among small market). (15)

There have been lot of awareness about adolescents missing meals as a behavioral change (16). The present study also shows 59% of students think having breakfast will affect on their concentration and the rest was 41% did not have an effect on their concentration. According to report published in the Journal of the American Dietetic Association breakfast eaters may have improved memory and get better grads on tests compared to kids who skip breakfast. "Children who don't eat breakfast also suffer from hunger due to lack of fuel to start day".(17)

Conclusion

Food consumption patterns of children and adolescents becomes an essential factor to promote and ensure a proper growth and development, especially in elementary school-age children. Students can access proper nutrient supply through a well-planned menu which lead the students to actively participate the school meal program. Therefore, the school meals should provide enough nutrients and a realistic menu plan for the physical development and health of students. In present study more than half of the students satisfied with the canteen food service and nutrition program over all. The extent to which schoolchildren were consumes high-energy foods such as chocolates, biscuits, cake and Patoto foil salted was provided in all schools canteen. These foods are eaten mainly away from home and make a large contribution to the overall diet Therefore, eating breakfast and snack should be recommended by parents and teachers.. These observations should contribute to future interventions in food and nutrition education targeted at students, their parents and school canteens.

Recommendation:

It is recommended that emphasis on educational sessions about nutrition for parents and for

student as a part of school curriculum, Attention to active role in changing the behaviour of the children. Healthy snacks and food choices should also be made available at places including energy dense and low nutrient density foods and focus on food and beverages with a high nutritional value. Provide snacks include the necessary nutrients for teenagers (fresh milk, natural juice, fruits, vegetables and reduce the desserts) and provide special food to people with special needs (such as diabetics). Attention to morning nutrition to the student and not to neglect the morning breakfast. Provision of places allocated to eat breakfast and to provide healthy nutrition guide. Presence of the place of favorite food sales near school, private academies, and homes and awareness of and interests in the policies on favorite foods and health. Monitor prices to ensure that manipulated the prices are in the canteen same prices outside the school without increasing them. Our study has certain limitations were did not clarify the association between diet and socioeconomic and demographic factors as well as pattern of food intake among elementary school students. Additional studies need to be carried out for more detailed information about the socioeconomic effect on intake, diet and school feeding of Libyan adolescents.

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Appendices

Table 1.1: show sampling plan by zone

Sample	Al-birka	Al-salawy	City centre	Total
Total number of school)	56	24	38	118
School selected for study (25%)	14	10	6	30
Number students	4388	3200	1496	9084
Number of students (25%)	800	1097	374	2271

Name of the area	Grad 7	Grad 8	Grad 9	Total
Alberka (boys +girls)	368=(135+233)	349=(89+260)	380 =(98+282)	1097
Benghazi Central (boys +girls)	135=(30+105)	120=(34+86)	119=(25+94)	374
Al-salawi (boys +girls)	247=(112+135)	254=(107+147)	299=(113+186)	800
Total	750	723	798	2271

Questionnaire

Study of students preference and satisfaction on meals served by canteen of elementary school in Benghazi

Firstly: The schools data:-

1-Name of school:-.....

2-Type of school:-(Boy / Girls).

3-School years:-.....

4- Preparatory grades:-

(Seventh grade / Eighth grade / Ninth grade).

Secondly: personal data:-

5. Name of the student:-.....

6. Age:-.....

7. Gender:- (Male / Female).

8. Nationality:- (Libyan / Another nationality).

9. Family income:-

(Less than 200 / 200-350 / 350-500 / More than 500).

10. Educational level of father:-

(Primary / Preparatory / Secondary / University).

11. Educational level of mother:-

(Primary / Preparatory / Secondary / University).

Thirdly: students data:-

12. Is there canteen in your school?

(Yes / No).

13.Is there a place dedicated to students eating food?

(Yes / No).

14.What is meal provided for the canteen ?

(Breakfast / Lunch / Snacks).

15. Do you rely on breakfast provided by school to you?

(Yes / No / Sometimes).

16. What are number of days dealing a with breakfast at school?

(Daily / Sometimes / None of them).

17. Do you eating breakfast on a regular time?

(Yes / No).

i. if the answer is yes where is it ?

(At home / At school / At both).

18. Are you keen to bring you food from home?

(Yes / No).

19. Do you dealing with breakfast at home?

(Yes / No / Sometimes).

20. Do you like what the school canteen ?

(Yes / No / Sometimes).

21.Do you think that having breakfast could affect the level of focus?

(Yes / No).

22. Do you satisfy on the nutritional status that are provided by the canteen?

(Yes / No).

23.Does you canteen offer a variety of healthy food which satisfied you?

(Yes / No).

24. Do you consider that food which includes soft drinks, chocolate, biscuits, and chips, enough to cover the needs for food per meal?

(Yes / No).

Fourthly:- Cafeteria data

25. Does your school follow any guide to healthy eating ?if the answer is yes, add a directory to the questionnaire

(Yes / No).

26. Do the following nutrients are available in the list of food provided in the school cafeteria?

*Milk, yogurt, dairy.

* Fruits.

* Salad.

*Bread/ corn flakes.

*Fresh juice.

*Soft drinks.

*Fresh milk.

*Sandwiches.

*Drinking water.

*Sweets.