

ASSESSMENT OF DIETARY HABITS OF ADOLESCENT IN ARMY PUBLIC SCHOOLS IN CHAKLALA GARRISON

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ABSTRACT

Objective: To determine the knowledge and practice of adolescents regarding dietary habits and to identify association of various socio-demographic variables with knowledge and practices.

Study Design: Descriptive Cross sectional study.

Place and Duration of Study: Army Public Schools in Chaklala Garrison, Rawalpindi district, Punjab Pakistan from Oct 2016 To Mar 2017.

Material and Methods: Cross sectional study was conducted on sample size of 400 students in 14 to 17 years age group, studying in Army Public Schools of Chaklala Garrison of Rawalpindi district. Data was collected from respondents selected through universal sampling by structured food frequency questionnaire. The study was conducted by voluntary participation and ability of each person to give verbal informed consent.

The Questionnaire had four parts which consisted of participants' demographic profile, participants' level of knowledge, level of consumption of each food item/type and questions regarding the participants' diet and how often they consumed breakfast and lunch.

Results: Statistical analysis showed that adequate knowledge regarding dietary habits was found in 270 (83%) students, while positive attitude in 325 (95%) respondents. Significant statistical association exists between socio-demographic characteristics and knowledge and practices of students.

Conclusion: The study highlights indicated positive relationship between sociodemographic characteristics, knowledge and attitude among students and proposes recommendation for their healthy habits, for adoption of balanced diet contributing towards health promotion

Keywords: Adolescents, Dietary habits, Nutritional knowledge, Obesity.

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INTRODUCTION

Adolescence is a unique period in life as it is a time of intense physical, psychological and cognitive development. This uniqueness puts the adolescence in a conflicting situation and stress which effect many developmental aspects of the personality. Adolescence is also a time of growth and development, with higher bodily demands of total nutrient. Dietary habits developed in adolescence are likely to influence long term behaviors and may have lifelong effect on health. Public health professionals and nutritionist are encouraging amalgamation of healthy eating practices into the lifestyles of adolescence in an effort to optimize health and decrease the risk for

chronic diseases such as obesity, heart disease, diabetes, hypertension and hyperlipidemia¹.

In low-income and middle-income countries, maternal and child malnutrition encircles overweight, obesity and a growing problem with undernutrition along with stunting. Low BMI, pinpointing to maternal undernutrition, has declined somewhat in the past two decades but continues to be prevalent in Asia and Africa. It is estimated that undernutrition in the aggregate is a cause of 3.1 million child deaths annually or 45% of all child deaths in 2011. Maternal overweight and obesity result in increased maternal morbidity and infant mortality. Childhood overweight is becoming an increasingly important contributor to adult obesity, diabetes, and non-communicable diseases².

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The general finding is that due to under-nutrition 3.1 million children younger than 5 years die every year; that is an overwhelming 45% of total child deaths in 2011. The World Health Assembly nutrition targets for reduction of stunting, wasting, low birthweight, anaemia, and overweight, and increasing exclusive breastfeeding in the first 6 months of life (panel), can be achieved by 2025 with sufficient support. The costs of inaction are enormous³.

Healthy dietary habits and regular physical activity can help people achieve and maintain good health and reduce the risk of chronic disease through out all stages of the lifetime. In Pakistan there is evidence that across the country there is rise in childhood obesity and situation is constantly worsening⁴.

Pakistan is placed in mortality stratum group-D of the EMRO WHO with high child and adult mortality (World Health Organization, 2004.). The population comprised the most vulnerable, the poorest and the least educated group of people who are disproportionately affected by various deficiencies whereas in Pakistan Armed Forces spectrum of low, middle and high socio economic all three are seen altogether. Few studies have been done as civilian surveyor has limited access to Army setup of schools. In National Nutritional Survey, there is no reference of Army Garrison as no sample was collected. As there was need to do work in this background hence current study is to assess dietary habits in adolescents in Army Public Schools. This study will serve to provide a baseline for future studies that will help the planners and decision makers in formulating and designing grounds for improvised dietary habits in adolescents⁵.

MATERIAL AND METHODS

Study Population

This descriptive cross sectional study was conducted in Army Public Schools, of Chaklala Garrison, Rawalpindi, Pakistan from October 2016 to March 2017. A total of 400 participants of class 8th, 9th and 10th with age range (14-17 years) were included in the study. Children

having diagnosed chronic diseases, which were ruled out by verbal questioning of respondents.

Data Collection

The study was conducted by voluntary participation and ability of each person to give verbal informed consent.

Food Frequency Questionnaire (FFQ)

The data collection instrument was made up of four parts. Part-1 consisted of participants demographic profile which included gender, age, education, parent's education, occupation height and weight. Part-2 consisted of 12 questions regarding participants level of knowledge and was based on a 5-point Likert scale (1=very unhealthy 5=very healthy).

Part 3 of the instrument consisted of the same 12 questions as in Part 2 but this part was in regard to the participants' level of consumption of each food item/type. Part 3 of the instrument was also based on a 5-point Likert scale (0= rarely or never consume, 1= consume or use 1-3 times a month, 2= consume or use 1-3 times a week, 3= consume or use 4-6 times a week, 4 = consume or use every day). Part 4 of the instrument consisted of questions regarding the participants' diet and how often they consumed breakfast and lunch. The questionnaire was pretested on 15% of sample size at study settings.

Review of Data and Statistical Analysis

The data collected were organized, tabulated and statistically analyzed using SPSS software (version-22). Continuous variables are described as mean \pm standard deviation whereas qualitative variables were analyzed by frequencies and percentages.

Inferential statistics were calculated using Chi-square test. The test was used to examine the possible association between dependent and independent variables. A *p*-value <0.05 was taken as significant.

The study was approved by the Institutional Ethical Review Board AFGMI. Participation in the study was voluntary and based on the ability of each person to give verbal informed consent.

Respondents were given the right to informed consent and confidentiality of information.

RESULTS

Of the 400 adolescent participants sampled for the study, 400 questionnaires were completed, giving a response rate of 100%. Mean age was found to be 15 years. 47% respondents were boys

BMI (18.5-24.9) and few of them, 13 (3.25%) were obese with BMI more than 29.

Level of Knowledge Regarding Diet

Knowledge of students was judged regarding diet. It showed 108(27%) boys had adequate knowledge regarding healthy nutritious diet whereas 110 (27.5%) girls had adequate know-

Table-I: General Socio-demographics variables of n=400.

Variables		Frequency(%)
Age (in years)	(Mean \pm SD)	15 \pm 0.14
	Range	14-17
Gender		
Male		188 (47)
Female		212 (53)
Education of Father		
Uneducated		29 (7)
Less educated		227 (57)
Highly educated		144 (36)
Education of Mother		
Uneducated		1 (0.25)
Less educated		382 (95.5)
Highly educated		17 (4.25)
Occupation of Father		
Doctor		20 (5)
Engineer		38 (10)
Teacher		137 (34)
Army		205 (51)
Occupation of Mother		
Working		82 (20)
Housewife		318 (80)
BMI		
Under-weight (<18)		39 (10)
Healthy (18.5-24.9)		291 (73)
over weight (25-29)		57 (14)
Obesity (Above 29)		13 (3)

and 53% were girls.

The socio-demographic characteristics of study participants (Table-1) showed majority, 212 (53%) female respondents and 188 (47%) male participants. The greater number, 318 (80%) mothers of students were house wives living at home and 382 (95.5%) were less educated whereas 205 (51%) fathers were serving in Army with 144 (36%) having high education.

The Body-Mass-Index showed majority i.e. 291 (72.75%) adolescent participants had healthy

ledge related to food whereas 102 (25.5%) girls and 80 (20%) boys had inadequate.

Dietary Practices

Level of practice regarding diet was assessed of respondents. It showed that 113 (28.25%) boys and 100 (25%) girls had good practices and in comparison 75 (18.75%) boys and 112 (28%) girls had bad dietary practices.

It was observed in the present study that all of the mothers of respondents were literate. This is reflected in (table-II) which shows that, out of

400 respondents approximately 55% had good knowledge regarding diet, they belonged to mothers who were less educated whereas 58% having good knowledge belonged to highly

Table-III shows practices of respondent's association to education and occupation of parents. Fifty Six percent students had good practices despite of having less educated mothers,

Table-II: Association between demographic characteristics and knowledge of respondents.

Demographic Characteristics	Knowledge Frequency(%)		Total (n=400)	p-value
	Good	Bad		
Education of Mother				
Uneducated	8 (28)	21 (72)	29	0.009
Less Educated	126 (55)	101 (45)	227	
Highly Educated	84 (58)	60 (42)	144	
Education of Father				
Uneducated	0 (0)	1 (100)	1	0.010
Less Educated	203 (53)	179 (47)	382	
Highly Educated	15 (88)	2 (12)	17	
Occupation of Mother				
Working	62 (76)	20 (24)	82	0.001
Housewife	156 (49)	162 (51)	318	
Occupation of Father				
Doctor	10 (50)	10 (50)	20	0.039
Engineer	17 (45)	21 (55)	38	
Teacher	88 (64)	49 (36)	137	
Armed Forces	103 (50)	102 (50)	205	

Table-III: Association between demographic characteristics and practices of respondents.

Demographic characteristics	Practices Frequency (%)		Total (n=400)	p-value
	Good	Bad		
Education of Mother				
Uneducated	24 (83)	5 (17)	29	0.001
Less Educated	127 (56)	100 (44)	227	
Highly Educated	62 (43)	82 (57)	144	
Education of Father				
Uneducated	1 (100)	0 (0)	1	0.045
Less Educated	204 (53)	178 (47)	382	
Highly Educated	8 (47)	9 (53)	17	
Occupation of Mother				
Working	51 (62)	31 (38)	82	0.023
Housewife	162 (51)	156 (49)	318	
Occupation of Father				
Doctor	3 (15)	17 (85)	20	0.001
Engineer	18 (47)	20 (53)	38	
Teacher	89 (65)	48 (35)	137	
Armed Forces	103 (50)	102 (50)	205	

educated mothers. Education of mother and knowledge of respondent is significantly associated which is shown by p-value 0.009. Similarly 53% respondents had good knowledge and they belonged to fathers who were less educated.

whereas 53% students had less educated fathers but had good practices. This showed significantly good practice with (p-value 0.001).

Association Between Different Variables

Adequate knowledge of respondents was highly significant with good practices (p -value 0.001).

Number of mothers who are less educated belong to boys i.e 55.9% as compared to girls whose mothers were 30.5%. Boys had more highly educated mothers in comparison to girls which was 31.4% and 21.3% respectively. Association of knowledge with diet as 54.2% adolescents had healthy dietary habits based on adequate knowledge which shows significant association among the two exhibited by p -value 0.001.

Intention and Perception Regarding Diet

Fifty five percent respondents controlled diet with intention of losing weight. Regarding perception of current diet, 51% respondents believe their diet is okay whereas 6% believe their diet is very healthy. Forty percent respondents believe that they are of normal weight but gaining weight and 10% think that they are overweight. Mostly respondents taking breakfast 1-3 times a month (46%). 1-3 times /wk by 58% respondents.

Reasons of Unhealthy Diet

19 percent respondents had no idea, 33% said due to availability in canteen. 16.80% and 25% reported unhealthy diet because of family and friends respectively. 3% said due to working mom and 1.8% had no other reason (fig-1).

37% respondents learned from school whereas 33% learned from media (fig-2).

DISCUSSION

The present study assessed the everyday diet of a population of Pakistani adolescents. The gender ratio, the education level of mother and the food preferences of the study population were important for the study.

It was found in the study that (54.2%) adolescent had adequate knowledge regarding diet. Similar number (57%) of adolescent had good dietary practices. According to research carried out at Norwegian University that older adolescents are at a higher risk for eating

unhealthy than younger adolescents and they have knowledge of healthy diet. The KAP model suggests that behaviour is a result of knowledge and attitudes⁶. A great limitation of the KAP model is that it ignores several aspects that also affect human behaviour, for instance impulsivity. There is a great focus on the importance of healthy lifestyle in the society, and it is

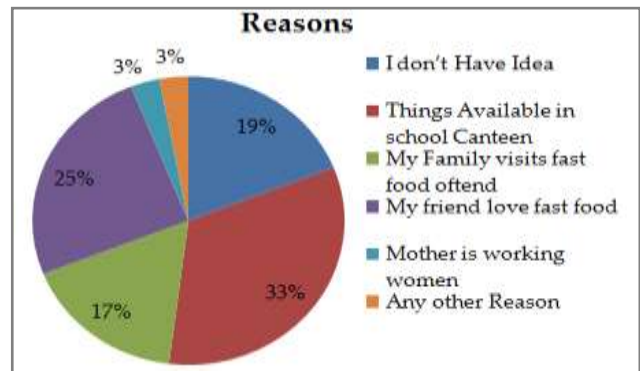


Figure-1: Reasons of unhealthy diet.

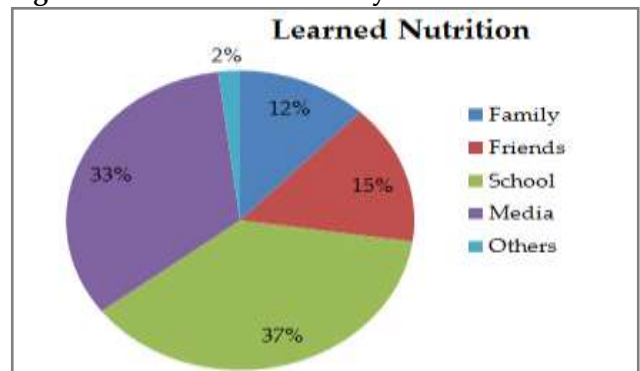


Figure-2: Learning about nutrition.

reasonably to believe that most of the population knows what is considered to be healthy food. Still, people continue to eat unhealthy⁷. Goel *et al* state that even though knowledge is necessary to change behaviour, it may not be sufficient⁸.

Socio-demographic profile of participants including education and job of parents was significantly associated with adequate knowledge and good practices of dietary habits. Mothers' education had significant influence over how many times boys ate meals while it appeared to have a positive correlation with girls' meal frequency.

In our study 47% were boys and 53% were girls and they had healthy dietary habits. This

was consistent with study carried out in Ghana Junior public school. When investigating dietary habits and gender, it seems like girls have healthier dietary habits than boys⁹.

The KAP model suggests that girls have greater knowledge of nutrition and health, and therefore express healthier attitudes than boys¹⁰. It is a matter of fact that women in general tend to be more knowledgeable about food, nutrition, health and their relationships, and they exhibit more positive health and food-related beliefs and attitudes than men. Knowledge is a central mediator of the gender differences in healthy food consumption in adolescents¹¹.

In Ugandan study education level and occupation of parents was found to be associated with having better dietary habits. Adolescent girls are more engaged with healthy food due to societal explanations to the gender role. The study revealed same results as (121) girls practicing good dietary habits more as compared to boys (119) in Ghana¹².

In our study 55% respondents diet to lose weight. The findings are also in agreement with studies done in Guinea and Ethiopian rural communities. The importance of being slim is also representing another aspect of social cognitive theory, namely outcome expectations. The study shows significant results with 0.001 *p*-value¹³. Respondents showing good adequate knowledge practiced good dietary habits. According to research, it seems like high socioeconomic position is associated with healthy dietary habits¹⁴. Several studies have found differences in knowledge and attitudes towards nutrition across socioeconomic position, strengthening the assumptions of the KAP model¹⁵. The mother of a family often plays an important role in the family nutrition. Mothers with low education had less knowledge about healthy nutrition, more environmental barriers for eating healthy, and found little support in the family for making healthy choices. Therefore, they often bought the food that was cheapest,

easiest to prepare and which was most appreciated in the family¹⁶.

Self-efficacy has shown to be an important for dietary habits. Students of low socioeconomic position had a higher intake of fast food and calorie-dense food than their counterparts with high socioeconomic position, while the intake of fruits and vegetables was lower¹⁷. Self-efficacy to change behavior was explaining a great share of the variation in consumption across socioeconomic position. As with the other sociodemographic characteristics, it has also been shown that adolescents of low socioeconomic position are more likely to report that unhealthy food is available in the home environment¹⁸. The strongest mediator of the differences in fruit and vegetable intake among adolescents of parents with high versus low educational level was the perceived accessibility of this kind of food at home¹⁹.

The tendency of socioeconomic position being associated with dietary habits is shown to be stronger among girls than boys. A study carried out in Norwegian University of Science and Technology, whose aim was to investigate whether there were associations between adolescent dietary habits and age. According to research, it seemed like older adolescents are at higher risk for eating unhealthy than younger adolescents²⁰.

The point yielded disappointing results as respectively 60% and 46% of the adolescents did not eat vegetables or fruit even once a day. These results are in accordance with the low fruit and vegetable consumption recorded in a sample of Swiss adolescents¹⁶.

CONCLUSION

Majority of adolescent have adequate knowledge regarding nutrition and dietary habits. In spite of having background knowledge the young adults fail to have healthy dietary habits. Leading to development of unhealthy life style and later predispose to menace of non-communicable diseases. This desirable effect can be achieved by community participation.

Including individual, parents, friends, teachers and definitely the environment. Similarly government can play vital role by introducing legislations at school level or by introducing free but healthy meals to students.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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