

Dietary Practices among Adolescents: Do Boys Eat Better than Girls?

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ABSTRACT

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. These developmental stages are closely linked with adolescent's dietary practices. The present study was conducted to assess the dietary practices of adolescent boys and girls in relation to their mothers' education. The total number of subjects was 702, age between 14-16 years, studying in randomly selected schools of District Chakwal. The study revealed that boys eat relatively better than the girls of same age despite of the fact that girls' mothers were more educated than boys' mothers at P. Value 0.002. Boys were taking more regular meals (78%) as compared to girls (62%). Education of mothers had no relevance with regularity of meals presumably because most of the mothers were either matriculate or had education up till Intermediate. A negligible number of mothers had a graduate level degree or higher. Dietary practices of the boys were better as compared to girls at P. Value < 0.002. Regularity in having breakfast was better in boys as compared to girls i.e. 87% boys and 64% girls. Almost similar pattern was observed in lunch consumption, where 80% boys and 70% girls were taking lunch regularly. Most of the male adolescents (89%) were taking their dinner regularly while only 65% female adolescents were regular in taking dinner. According to the participants' major reasons for irregularity in meals were school timings as well as their own liking and disliking in having meals. Rice was the most favorite staple food among the participants. The tendency of skipping meals was also more prominent in girls which needs to be explored further.

Keywords: Gender, Dietary Practices, Adolescents

1. INTRODUCTION

Adolescence is a transitional period between childhood and adulthood, which begins from the earliest signs of secondary sexual characteristics development and ends when a person has achieved adult status (World Health Organization, 1995). It is also considered a unique intervention point in the life-cycle for a number of reasons (Alam, Roy, Ahmed, & Ahmed, 2010). The rapid change in physical growth and psychosocial development place adolescents into a nutritionally vulnerable group with unhealthy eating behaviors that do not meet dietary recommendations (Savage, Crawford, Worsley, & Ball, 2007). It has been recognized by the Health professionals that adolescents' growth and development is affected by the poor eating patterns (Society for Adolescent Medicine, 1999). In developing world the factors which are seriously associated with under nutrition of adolescent include: poor household economic condition, child labour (marker of household income-poverty), periodic food-shortage, burden of disease, poor knowledge about long-term consequences of under nutrition of adolescents, quantity & quality of food, and access to health and nutrition services (Kurz & Johnson-Welch, 1994). Moreover, in a food-insecure situation, gender is an important predictor of an adolescent's self-reported health status (Belachew et al., 2011).

Eating behaviors are central to an adolescent's physical development, health, and identity and are determined by a wide range of factors, including knowledge, attitudes, socio-demographic characteristics, behavioral, familial, and lifestyle factors (Adams, 1997; Martinez-Gonzalez et al., 1998). Diet is a relevant factor not only for growth and development, but also for the present and future health of adolescence (Lietz, Barton, Longbottom, & Anderson, 2002). Adolescence is a time of growing independence including increased opportunities to make decisions about what and when to eat (Whitney & Rolfes, 2002). Skipping breakfast is a decision that adolescents frequently make (Shaw, 1998; Siega-Riz, Carson, & Popkin, 1998), and healthy eating is often a low priority or not practiced (Neumark-Sztainer, Hannan, Story, & Perry, 2004). Along with meal skipping the other eating

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patterns among adolescents are: snacking, eating away from home, fast food consumption for meal and snack consumption and unconventional dietary patterns such as adopting vegetarian diet, specific weight loss diet and an overall reduction of food intake (Savige et al., 2007).

There is increasing evidence that diet in childhood and adolescence is related to diseases of adulthood like heart disease, osteoporosis, and cancer. Therefore, the evaluation and quantification of adolescent's habitual diet are of great concern (World Health Organization., 2003). Adolescent girls who engage in unhealthy weight-control behaviors are at increased risk for dietary inadequacy (Neumark-Sztainer et al., 2004). In country like America, adolescents tend to have less portion size of fruits, vegetables and calcium rich foods that can impair their growth and intake of foods high in fat leads to obesity (Story, Neumark-Sztainer, & French, 2002). The situation is reverse in the developing regions of world such as South Asia, where under-nutrition is very common (Alam et al., 2010). Stunting in adolescence is 32% in India, 36% in Bangladesh and 47% in Nepal, and low body mass index (BMI) is 53% in India, 50% in Bangladesh, and 36% in Nepal (Kurz., 1996), while there is no such data available for Pakistani Adolescence . In a developing country like Pakistan, the general health of the people is not exemplary and that of youth seems to be most affected. There may be many reasons for this unfortunate state of affairs including repeated infections, un-healthy environment, lack of health and recreational facilities, but improper nutrition seems to play the main role. Girl child health status appears to be even worse. This study aimed to assess the eating practices of adolescence in relation to mother's educational status.

2. METHODOLOGY

The study was conducted in randomly selected schools of District Chakwal (Punjab). It has a population of around 1.35 million people (Projected figure from District Census Report (1998). Its total area is 1.6 million acres and there are 1360 government schools in this district including those located in 461 villages. Out of these, 171 are high schools. It was an institution based descriptive study. A stratum of sampling was made of village schools and then of adolescents. Nearly equal number of school going boys and girls belonging to an age group of 14-16 were included in the population sample on random basis.

Sixteen high schools were selected through simple random sampling (Nearly 10% of total). A semi structured questionnaire was developed and pretested before actually going into data collection. The data was then collected with the permission of District Education Department. Teachers of the selected schools were also involved for easy access to the subjects. Information was collected both from the students and mothers regarding dietary practices of the selected sample.

Statistical Analysis was performed after the data was cleaned and quality was ensured. The errors were repeatedly checked against the filled questionnaires. The quality of data was ensured in the first instance through making every conscious effort that the forms were filled by the students themselves and secondly by including only error free forms in the data sheet. The data was entered on SPSS version 17. Various variables, with multiple options were dichotomized. Univariate and bivariate descriptive statistics (simple frequencies, cross tabulations through Chi Square and summary statistics) for various variables were then generated.

3. FINDINGS

3.1. Base Line Distribution of Adolescents

A total of 702 adolescents were questioned, out of which 342 (49%) were boys and 360 (51%) were girls with the age bracket of 14 to 16 years. (Table 1). A total of 16 schools were included out of which 05 were from each of boys and girls, while 06 were of co-education set up. Nine schools were located in rural area while 07 were from urban settings. All the co-education schools were being run privately and were located mostly in urban areas of the district. Many students from villages also travelled to urban schools for better educational prospects. Therefore the subjects formulated a homogenous group.

3.2. Educational Level of Respondent's Mothers

Mothers' education is considered to be important for better upbringing of the children. In the present study the educational status of mother's was categorized as under Matric, Matric and Intermediate & above. According to the Education Department Chakwal Government of Punjab, the literacy level of District Chakwal is 76% which confers upon it the status of 06 most literate districts in the Punjab and 11 in Pakistan. It was observed in the present study that almost all of the mothers were literate. This is reflected in Table 2, which shows that out of the 702 respondents, more than half of the adolescents (56%) belonged to mothers whose education was less than Matric, while 25% (178) were having education up to Matric level. Only 19% of the mothers were having Intermediate or above education.

Table 1. Age and Gender Wise Distribution of Adolescents (n=702)

Ages	Boys	Girls	Total
	%(n)	%(n)	%(n)
14 years	38 (130)	48 (174)	43(304)
15 years	31 (106)	37 (131)	34(237)
16 yrs	31 (106)	15 (55)	23(161)

3.3. Dietary Practices among Adolescents

Adolescent eating patterns are established through a complex process involving internal and external factors such as food preferences and availability, body weight perception, and parental & peer influences (Stockmyer, 2001; Videon & Manning, 2003). Disordered eating patterns, have been linked to a number of physical and psychological problems (Must & Strauss, 1999; Patton et al., 1997; Wardle & Cooke, 2005) and these are developed from early childhood and carried forward at the adolescent's age. Imbalanced nutrition, lack of physical activity, health conditions, medication, friends, school work, relationships, family and work combine to make the lives of teenagers complex and challenging. In our study it was found that 78 % (266) among boys and 62% (224) among girls ate three times a day, (the number of meals usually practiced in the study area). It was higher than the findings of Khadri (2010) where only 59% participants were having three main meals regularly. Present study also revealed that boys took lead when it came to eating more than three times a day although more frequent small meals as against three main meals, is a relatively less practiced concept among adolescents of District Chakwal. Dietary practices of the boys were comparatively better than girls (Table 3). The possible reasons for this difference might be body image concerns among girls as they try to lose weight even if they are of normal weight. This is done by skipping important meals and other eating behaviors (Chin & Mohd, 2009). Consumption of each meal was also separately studied to observe the dietary practices of adolescents. Breakfast is often referred to as the most important meal of the day; yet young people are more likely to miss breakfast than any other meal (Pearson, Biddle, & Gorely, 2009). Studies show that many young adults have the habit of skipping breakfast (Keski-Rahkonen, Kaprio, Rissanen, Virkkunen, & Rose, 2003; Osako, Takayama, & Kira, 2005; Song, Joung, Engelhardt, Yoo, & Paik, 2005). Eating breakfast is important for the health and development of children and adolescents (Shaw, 1998). In this regard the findings of our study are quite encouraging as the vast majority of respondents were consuming breakfast regularly (Table 3). This practice was nearly universal in both boys and girls as only a small percentage of females were skipping the breakfast as compared to male subjects. Pattern of sometime skipping the breakfast was also high in female adolescent (22%) as compared to male adolescents (9%). It has also been found to be associated with dysmenorrhea among the females (Fujiwara, 2003). In another study (Moy, Gan, & Mohd Kassim, 2006) found that adolescent girls were skipping meals more than adolescent boys especially the breakfast. The above mentioned findings are contrary to the findings of Stewart and Menning (2009), who reported that adolescents ate lunch and dinner more often than breakfast. It is also found in an earlier study that increased snacking, lunch skipping; a sedentary lifestyle and obesity have been more common among those who skip breakfast than the breakfast eaters (Moy. et al., 2009). The present study indicated that the snacking in between meals was common among the adolescents. Evening snacks were common in the study population. This was 42% among boys and 37% among girls. (Table: 3) Adolescents are increasingly indulging into the habit of nibbling food rather than having proper meals (Liu, Zhai, & Popkin, 2006) and the in-between meals contributed to the major part of energy intake, of which about half of the energy intake in-between meals was from snack foods (Sjöberg, Hallberg, Höglund, & Hulthen, 2003). In current study on average 13% adolescent snacked between breakfast and lunch time daily and 36% snacked between all meals, while in a study carried out by McNaughton, Ball, Mishra, and Crawford (2008), 14% of participants were skipping the lunch, whereas according to findings of Kaur., Kochar, and Agarwal (2007), 20% of participants missed the lunch (Table: 3). The frequency of having afternoon tea seemed quite homogenously mixed up in the adolescents of the study. The percentages of those who never took tea, those who were regular in afternoon tea and those who took it sometimes did not have very significant difference. Dinner is also one of the three routine meals and in this study it was found to be skipped less as compared to other meals. In contrast to it quite different finding was depicted in the study of Khadri (2010) in United Arab Emirates where 82% of the adolescents were skipping the dinner. In other studies quite lower percentage of dinner skipper were found i.e. 3% and 7% as reported by Kaur, Choi, Mayo, and Harris (2003) and Woodruff, Hanning, Lambraki, Storey, and McCargar (2008) respectively, which is close to the present study.

Table 2. Educational Status of the Respondent's Mothers

Mothers' Education	Adolescents				Total		P. Value
	Boys		Girls		n	%	
	n	%	n	%			
Under Matric	177	52	216	60	393	56	0.002
Matric	83	24	95	26	178	25	
Intermediate & above	82	24	49	14	131	19	
Total	342	100	360	100	702	100	

Table 3. Meal pattern of the adolescents

Dietary Practice among Adolescents							
	Meal pattern /day	Boys(342)			Girls(360)		
		n	%	P. Value	n	%	P. Value
Frequency of Meals per day *	<3	19	6	0.038	51	14	0.002
	3	266	78		224	62	
	>3	56	16		85	24	
General Meal Pattern							
Breakfast	Never	15	4	0.675	51	14	0.001
	Sometimes	30	9		78	22	
	Regular	297	87		231	64	
Lunch	Never	20	6	0.851	44	12	0.014
	Sometimes	50	15		64	18	
	Regular	272	80		254	70	
Tea	Never	103	30	0.308	118	32	0.001
	Sometimes	128	37		142	38	
	Regular	111	33		116	30	
Dinner	Never	16	5	0.361	53	15	0.002
	Sometimes	20	6		75	20	
	Regular	306	89		232	65	
Snacks between meals	Mid morning	40	11	0.541	48	13	0.569
	Mid afternoon	128	37		134	37	
	Evening	142	42		132	37	
	Night time	32	9		46	13	
Eating outside home	Never	115	34	0.084	180	50	0.045
	Occasionally	201	59		141	39	
	Frequently	26	7		39	11	

Table 4. Favorite Foods of Adolescents

Favorite Foods of Adolescents		
Food Items	n	%
Meat/Poultry	152	21
Rice	398	57
Eggs	15	2
Vegetables	56	8
Milk	33	5
Fruit	39	6
Any other	9	1
Total	702	100

Table 5. Relationship between eating practices and mother's education

Education of Mothers														
Boys (n= 342)							Girls (n=360)							
Meals	UM		M		FA & Above		P.Value	UM		M		FA & Above		P.Value
	n	%	n	%	n	%		n	%	n	%	n	%	
* <3	5	3	4	5	9	11	0.002	23	11	18	19	10	20	0.001
*3	148	83	55	66	58	71		150	69	55	59	19	38	
≧ >3	24	14	24	29	15	18		43	20	21	22	21	42	
Total	177	100	83	100	82	100		216	100	94	100	50	100	

UM = Under Matric, M = Matric, FA & Above = Intermediate & Above.

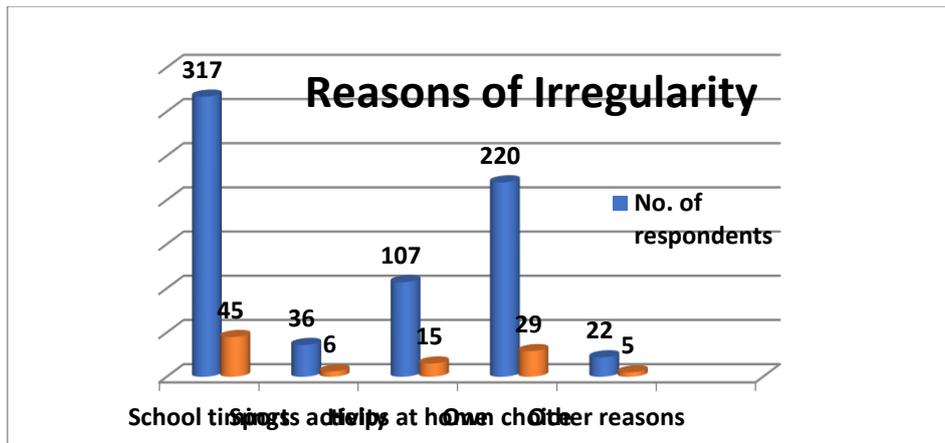


Figure 1. Reasons of irregularity of Meals

The tendency of skipping meals was also more prominent in girls due to increasing trend to lose weight so that they can be thin like the fashion models they idealize (Muazzam & Khalid, 2008). Sabharwal (2009) found in a study that girls generally do so by missing out an important meal. Dine out has now become a trend in our daily lives and more commonly practiced in big cities. So far in Chakwal city such practices are not so common. Majority of the girls & boys never ate out of home (Table 3).

Adolescents were also probed about reasons in irregularity in meals (Figure 1). The leading reason for irregularity includes shortage of time followed by the adolescents' personal likes and dislikes for having meals on regular basis. Other reasons included the sports activity and helping parents at home. The main reasons for breakfast skipping reported in earlier studies are lack of appetite and time, whereas dinner was missed due to lack of appetite, out of habit and to lose weight (Liu et al., 2006). In current study the biggest reason for the irregularity in meal times is school timings and additional time consumed in travelling to and from school as many adolescents travelled reasonably away from their homes to attend their schools in neighbouring villages. The other significant reasons, reported were adolescents' own choices and their help needed at home. It is interesting to note that boys were contributing more in household chores and helping in the domestic matters as compared to girls which is quite contradictory to the general perception in Pakistani culture. It might be due to the fact that boys are usually responsible for the day to day shopping for the kitchen stuff and other everyday items. Only 5% of the adolescents were engaged in miscellaneous activities due to which they had to skip the meals (Figure 1).

Table 4 indicates that rice was the most favourite food among adolescents (57%). Second in list was meat and poultry (21%) while the consumption of food according to choice was equally distributed for other foods. As generally perceived fruits were not the most popular food items among the respondents; however, girls expressed relatively more likeness for fruits. Rice stood out as the most favorite food of the adolescents and this was contrary to the findings of Liu et al. (2006) who found that a large portion of snacks consumed by the Chinese children and adolescents were fruits. Meat, poultry, eggs, milk and vegetables seemed more popular among boys while girls like rice and fruits more than boys.

Table 5 shows that Mothers' education had no significant influence over how many times boys ate meals while it appeared to have a positive correlation with girls' meal frequency. Among 342 boys; 148 (83%) belonging to

under-matric mothers & among 360 girls; 150 (69%) belonging to mothers with same qualification were taking three meals regularly. The higher percentage of adolescents; whose mother's education was Matric or above was not in the habit of taking three meals a day. It was against the findings of Kaur. et al. (2007) who proved in his study that meal skipping pattern can be improved by imparting the education. The benefits of mother's education for children's health outcomes and nutritional status commonly relate to the higher socioeconomic status, which in turn operates through a set of "proximate determinants" of health that directly influence child health outcomes and nutritional status (Mosley & Chen, 1984).

Findings of present study indicate that minor differences in educational status of the mothers do not have significant effect on regularity of meals and eating practices of the adolescents as majority of the mothers' educational status was up to intermediate level (Table 5).

4. CONCLUSION

It is concluded that dietary practices of adolescents of District Chakwal are not much discouraging. Comparatively boys are more concerned about healthy eating practices. Skipping of meals is not much common, among both boys and girls. Mothers' moderate levels of education do not make much difference in establishing good or bad eating habits of their children. Therefore, it is recommended to enhance the level of mothers' education so that its positive effect could be established in imparting healthy eating practices. The school management should generate awareness programs for adolescents about health and nutrition education. The Health and Education Departments may work in collaboration to launch health and education campaigns to inculcate health sensitivity and nutrition education among school children, their parents and teachers to promote better dietary practices among adolescents.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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