

Finding out Personal Food Habit

Consumption of Soft Drinks by the Respondents

Table – 16: Distribution of the respondents by consumption of soft drinks

Consumption of soft drinks by the respondents	Area of living		Total
	Urban	Rural	
Cold drinks	116 (74.8%)	80 (75.5%)	196 (75.1%)
Fruit Juice	20 (12.9%)	17 (16.0%)	37 (14.2%)
None	19 (12.3%)	9 (8.5%)	28 (10.7%)
Total	155 (100.0%)	106 (100.0%)	261 (100.0%)
* Total Population = 261, Urban = 155, Rural =106			

Table – 16 shows that, Out of 261 respondents majority of the respondents 116 (74.8%) were taken Cold drinks and Only 20 (12.9%) respondents were taken fruit Juice in urban area and in rural area majority of the respondents 80 (75.5%) were taken Cold drinks and only 17 (16.0%) respondents were taken fruit Juice.

Frequency of Consumption of Soft Drinks Intake by the Respondents

Table – 17: Distribution of the respondents by Frequency of consumption of soft drinks intake

Area of living	Frequency of consumption of soft Drinks intake		Total
	Daily	Sometimes	
Urban	43 (91.5%)	94 (50.3%)	137 (58.5%)
Rural	4 (8.5%)	93 (49.7%)	97 (41.5%)
Total	47 (100.0%)	187 (100.0%)	234 (100.0%)

Table – 17 shows that, Out of 261 respondents in urban area, majority of the respondents 94 (50.3%) were consumed soft drinks sometimes and 43 (91.5%) respondents consumed soft drinks daily. In rural area, majority of the respondents 93 (49.7%) were consumed soft drinks sometimes and only 4 (8.5%) respondents consumed soft drinks daily.

Consumption of Drinking Tea, Horlicks, Coffee by the Respondents

Table – 18: Distribution of the respondents by Consumption of drinking tea, horlicks, coffee

Consumption of drinking tea, horlicks, coffee	Area of living		Total
	Urban	Rural	
Tea	76 (49.0%)	43 (40.6%)	119 (45.6%)
Horlicks	26 (16.8%)	13 (12.3%)	39 (14.9%)
Coffee	25 (16.1%)	7 (6.6%)	32 (12.3%)
Milk	52 (33.5%)	47 (44.3%)	99 (37.9%)
* Total Population = 261, Urban = 155, Rural =106			

Table – 18 shows, Out of 261 respondents in urban area, majority of the respondents 76 (49.0%) were taken tea. 52 (33.5%) respondents were taken milk. 26 (16.8%) respondents were taken horlicks. 25 (16.1%) respondents were taken coffee and in rural area, majority of the respondents 43 (40.6%) were taken tea. 47 (44.3%) respondents were taken milk. 13 (12.3%) respondents were taken Horlicks and only 7 (6.6%) respondents were taken coffee.

Daily Intake of Fast Food by the Respondents

Table – 19: Distribution of the respondents by daily intake of fast food

Area of living	Daily intake of fast food		Total
	Yes	No	
Urban	122 (78.7%)	33 (21.3%)	155 (100.0%)
Rural	43 (40.6%)	63 (59.4%)	106 (100.0%)
Total	165 (63.2%)	96 (36.8%)	261 (100.0%)

Table – 19 shows that, Out of 261 respondents in urban area, majority of the respondents 122 (78.7%) taken fast food daily and only 33 (21.3%) respondentstaken fast food daily in rural area.

Time of fast food intake by the respondents

Table – 20: Distribution of the respondents by time of fast food intake

Area of living	Time of fast food intake		Total
	Daily	Sometimes	
Urban	22 (17.9%)	101 (82.1%)	123 (100.0%)
Rural	1 (2.3%)	42 (97.7%)	43 (100.0%)
Total	23 (13.9%)	143 (86.1%)	166 (100.0%)

* Total Population = 261, Urban = 155, Rural =106

Table – 20 shows that, Out of 261 respondents in urban area, majority of the respondents 101 (82.1%) were takenfast foodsometimes and 22 (17.9%) respondents were takenfast food daily.In

rural area, majority of the respondents 42 (97.7%) were taken fast foodsometimes and only1 (2.3%) respondents were taken fast food daily.

Daily Fruit Intake by the Respondents

Table – 21: Distribution of the respondents byDaily fruit intake

Area of living	Daily fruit intake		Total
	Yes	No	
Urban	106 (68.4%)	49 (31.6%)	155 (100.0%)
Rural	79 (74.5%)	27 (25.5%)	106 (100.0%)
Total	185 (70.9%)	76 (29.1%)	261 (100.0%)
* Total Population = 261, Urban = 155, Rural =106			

Table – 21 shows that, Out of 261 respondents in urban area, majority of the respondents 106 (68.4%) taken fruit daily and 79 (74.5%) respondents taken fruit daily in rural area.

Type of Fruit Intake by the Respondents

Table – 22: Distribution of the Respondents by Type of Fruit Intake

Type of fruit intake	Area of living		Total
	Urban	Rural	
Banana	53 (34.2%)	54 (50.9%)	107 (41.0%)
Orange	20 (12.9%)	18 (17.0%)	38 (14.6%)
Apple	36 (23.2%)	29 (27.4%)	65 (24.9%)
Guava	31 (20.0%)	30 (28.3%)	61 (23.4%)
Seasonal fruit	31 (20.0%)	22 (20.8%)	53 (20.3%)
* Total Population = 261, Urban = 155, Rural =106			

Finding Out Physical Activity among Secondary School Children

Playing or Performing Physical Exercise by the Respondents

Table – 23: Distribution of respondents by playing or performing physical exercise

Area of living	Distribution of respondents by playing or performing physical exercise		Total
	Yes	No	
Urban	139 (89.7%)	16 (10.3%)	155 (100.0%)
Rural	93 (87.7%)	13 (12.3%)	106 (100.0%)
Total	232 (88.9%)	29 (11.1%)	261 (100.0%)
* Total Population = 261, Urban = 155, Rural =106			

Table – 23 shows that, Out of 261 respondents in urban area, majority of the respondents 139 (89.7%) performed physical exercise and 93 (87.7%) respondents performed physical exercise in rural area.

Type of Physical Exercise by the Respondents

Table – 24: Distribution of respondents by Type of physical exercise

Area of living	Type of physical exercise			Total
	Playing	Assembly at school	Physical exercise	
Urban	64 (45.4%)	73 (51.8%)	4 (2.8%)	141 (100.0%)
Rural	36 (38.7%)	55 (59.1%)	2 (2.2%)	93 (100.0%)
Total	100 (42.7%)	128 (54.7%)	6 (2.6%)	234 (100.0%)
* Total Population = 261, Urban = 155, Rural =106				

Table – 24 shows that, Out of 261 respondents in urban area, majority of the respondents 73 (51.8%) were performed assembly at school. 64 (45.4%) respondents were played and only 4 (2.8%) respondents were performed physical exercise. In rural area, majority of the respondents 55 (59.1%) were performed assembly at school. 36 (38.7%) respondents were played and only 2 (2.2%) respondents were performed physical exercise.

Daily Playing Computer Games by the Respondents

Table – 25: Distribution of respondents by daily playing computer games

Area of living	Daily playing computer games		Total
	Yes	No	
Urban	43 (27.7%)	112 (72.3%)	155 (100.0%)
Rural	9 (8.5%)	97 (91.5%)	106 (100.0%)
Total	52 (19.9%)	209 (80.1%)	261 (100.0%)
* Total Population = 261, Urban = 155, Rural =106			

Table – 25 shows that, Out of 261 respondents in urban area, 43 (27.7%) respondents were played games in computer and 9 (8.5%) respondents played games in computer in rural area.

Duration of Playing Computer Games by the Respondents

Table – 26: Distribution of respondents by duration of playing computer games

Duration of playing computer games (Hours)	Area of living		Total (n=261)
	Urban (n=155)	Rural (n=106)	
1	21 (48.8%)	0 (0.0%)	21 (48.8%)
2	18 (41.9%)	0 (0.0%)	18 (41.9%)
3	1 (2.3%)	0 (0.0%)	1 (2.3%)
4	1 (2.3%)	0 (0.0%)	1 (2.3%)
5	1 (2.3%)	0 (0.0%)	1 (2.3%)
6	1 (2.3%)	0 (0.0%)	1 (2.3%)
Mean	1.63	0	1.63
SD	1.010	0	1.010

Table – 26 shows that, Out of 261 respondents in urban area, majority of the respondents 21 (48.8%) were played games in computer for 1 hr. 18 (41.9%) respondents were played games in computer for 2 hour. 1 (2.3%) respondents were played games in computer for 3- 6 hours. In rural no respondents were found to play games in computer. The mean duration of playing computer games was 1.63 ± 1.010 in urban area.

Duration of Sleep by the Respondents

Table – 27: Distribution of respondents duration of sleep

Duration of sleep (Hours)	Area of living		Total (n=261)
	Urban (n=155)	Rural (n=106)	
Up to 6 hours	21 (48.8%)	22 (51.2%)	43 (100.0%)
7 to 10 hours	130 (60.7%)	84 (39.3%)	214 (100.0%)
>10 hours	4 (100.0%)	0 (0.0%)	4 (100.0%)
Mean	7.72	7.39	7.58
SD	1.528	1.092	1.375

Table – 27 shows that, Out of 261 respondents in urban area, majority of the respondents 130 (60.7%) were found to sleep daily for 7 to 10 hours. 21 (48.8%) respondents were found to sleep daily for up to 6 hours and 4 (100.0%) respondents were found to sleep daily for >10 hours. In rural area, majority of the respondents 84 (39.3%) were found to sleep 7 to 10 hours daily. 22 (51.2%) respondents were found to sleep up to 6 hours. The mean duration of sleep was 7.72 ± 1.528 in urban and The mean duration of sleep was 7.39 ± 1.092 in rural area

To Compare Nutritional Status of Secondary School Children in Selected Urban and Rural Area

Difference of BMI in between Urban and Rural Area

Table – 28: Difference of BMI in between urban and rural area

BMI (Kg/m ²)	Area of living	Frequency (N)	Mean	Significance
	Urban	155	18.6037	t=1.004
	Rural	106	18.1816	P=.316

Table – 28 showing, mean BMI of urban area is 18.6037 kg/m² and mean BMI of rural area is 18.1816 kg/m². There is no significant difference of BMI in between urban and rural area.

Difference of BMI in between Male and Female

Table – 29: Difference of BMI in between male and female

BMI (Kg/m ²)	Sex	Frequency (N)	Mean	Significance
	Male	102	18.7221	t=1.125
	Female	159	18.2464	P =.262

Table – 29 showing, mean BMI of male is 18.7221kg/m² and mean BMI of female is 18.2464 kg/m². There is no significant difference of BMI in between male and female

Difference of Height in between Male and Female

Table – 30: Difference of Height in between male and female

Height (cm)	Sex	Frequency (N)	Mean	Significance
	Male	102	158.2549	t=.049
	Female	159	158.6478	P=.961

Table – 30 showing, mean height of male is 158.2549 cm and mean height of female is 158.6478 cm. There is no significant difference of height between male and female.

Difference of Weight in between Male and Female

Table – 31: Difference of weight in between male and female

Weight (kg)	Sex	Frequency (N)	Mean	Significance
	Male	102	47.2941	t= 3.518
	Female	159	42.8239	P value=.001

Table–31 showing, mean weight of male is 47.2941kg and mean weight of female is 42.8239 Kg. There is significant difference of weight between male and female.

Relationship of BMI and area of Residence

Table–32: Relationship of BMI and area of residence

Area of living	BMI				Significance
	Underweight	Normal	Overweight	Obese	Fisher exact test
Urban (n=155)	88(56.8%)	61(39.4%)	5(3.2%)	1(0.6%)	Test value= .824 P value=.966
Rural (n=106)	63(59.4%)	40(37.7%)	3(2.8%)	0(0.0%)	
Total (n=261)	151(57.9%)	101(38.7%)	8(3.1%)	1(0.4%)	

Table –32 showing, urban underweight 88(56.8%), normal 61(39.4%), overweight 5(3.2%), obese 1(0.6%) and rural underweight 63(59.4%), normal 40(37.7%), overweight 3(2.8%), obese 0(0.0%) There is no association of BMI and area of residence

Difference of Height in between Urban and Rural Area

Table–33: Difference of Height in between urban and rural area

Height (cm)	Area of living	Frequency (N)	Mean	Significance
	Urban	155	161.3226	t= .882
	Rural	106	154.3585	P=.379

Table–33 showing, urban mean height 161.3226 and rural mean height 154.3585 and $p=.379$. There is no significant differences of height between urban and rural area.

Difference of Weight in between Urban and Rural

Table–34: Difference of weight in between urban and rural

Weight (kg)	Area of living	Frequency (N)	Mean	Significance
	Urban	155	45.2065	t= 1.297
	Rural	106	43.6415	P=.196

Table–34 showing, urban mean weight 45.2065 and rural mean weight 43.6415 and $p=.196$. There is no significant differences of weight between urban and rural.

Discussion

School age is considered as a dynamic period of growth and development because children undergo physical, mental, emotional and social changes. In other words the foundations of good health and sound mind are laid during the school age period (Srivastava A et al., 2012). The present cross sectional study was conducted during April-June, 2016 conducted to determine the nutritional status among adolescent school children in selected urban and rural area. A total 261 sample were selected purposively and according to inclusion and exclusion criteria. They were interviewed with a specific pre-designed and pre tested questionnaire and some information were gathered by document review. Collected data were cleaned, edited and analyzed with the help of software SPSS windows version 23.

Some salient findings identified in the study are as follows:

In present study, among total 261 respondents, more than one third (35.8%) were in the age of 15 years in urban area followed by one fourth (25.2%) were in the age of 15 years in rural area. A good amount of respondents were in the age of 16 years in urban area and 13 years of rural area. The mean age of the urban respondents was 14.17 ± 1.482 years and rural respondents was 13.92 ± 1.568 years and total mean was 14.07 ± 1.520 years with minimum age 10 years and maximum age 17 years (Table-1).

Some previous studies conducted in rural and urban part of Rohtak, Haryana by (B.M. Vashist et al., 2009) where adolescents in the 13–14 years age group were selected from secondary school in rural areas and urban areas were used. This is consistent with this present study. Another cross-sectional study was conducted in Cameroon, Africa (Le'onieNzefa Dapi.,2005) carried out in an urban and a rural area. The study comprised 52 boys and girls, 12-15 years old, selected from the second grade in public secondary schools. For the rural area all adolescents in the class who were present at the time of the study were included (n= 26, 12 boys and 14 girls); the same number of adolescents was randomly selected from the school in the urban area(n= 26, 13 boys and 13 girls). The mean age among the adolescents was 12.7 years in the urban and 13.7 years in the rural areas. This study is consistent with this present study.

Current study found that the sex of the respondents. Among 261 respondents, most (63.9%) were female and (36.1%) were male in urban area and 60 (56.6%) were female and 46 (43.4%) were male in rural area Some previous studies conducted in Rural and Urban Areas of Anambra State

by (Nwabueze Achunam Simeon et al.,2015) Out of 365 pupils, 50.4% were males and 49.6% were females. This study seems to be similar with this present study.

Another study was conducted in rural school children of Bangladesh by (Nowsin et al., 2014). In that study Out of 340 students, 181(53.23%) were boys and 159(46.76%) were girls that are also seems to be similar with this present study.

In current study, among 261 respondents, most (94.8%) were Muslims, only (3.9%) were Hindus and (1.3%) were Christians in urban area and 100 (94.3%) were Muslims, only (5.7%) were Hindus in rural area.

Some previous studies conducted in Tangail region by (Islam et al., 2014). 63.9% (n=46) of participants were Muslim and 5.6% (n=4) Hindu and 30.6% (n=22) Christian in rural area. On the other hand, most of the participant were Muslim 75% (n=54), while 25% (n=18) were Hindu but no Christian (n=0) in urban area. This finding is nearly consistent with this present study.

Another study was conducted in rural school children of Bangladesh by (Nowsin et al., 2014).In this study, among 340 students 90.6% were Muslim and rest were Hindu. This study is consistent with this present study.

In this present study, that, among 261 respondents, (86.4%) fathers were illiterate, (72.1%) fathers did cross class 5 but (60.0%) stopped before SSC examination, (36.8%) fathers passed Secondary School Certificate, (48.4%) fathers passed Higher Secondary School Certificate, (60.0%) fathers completed graduation, among the rest (91.7%) fathers completed post graduation in urban area and in rural area 3 (13.6%) fathers were illiterate, (27.9%) fathers did cross class 5 but (40.0%) fathers stopped before SSC examination, (63.2%)fathers passed Secondary School Certificate, (51.6%) fathers passed Higher Secondary School Certificate, (40.0%) fathers completed graduation, among the rest (8.3%)fathers completed post graduation which indicates respondents fathers are more educated in urban area than rural area.

Among 261 respondents, (67.9%) mothers were illiterate, (76.3%) mothers did cross class 5 but (51.8%) stopped before SSC examination, (42.4%) mothers passed Secondary School Certificate, (48.1%) mothers passed Higher Secondary School Certificate, (50.0%) mothers completed graduation, among the rest (100.0%) mothers completed post graduation in urban area and in rural area (32.1%) mothers were illiterate, (23.7%) mothers others did cross class 5 but (48.2%) mothers stopped before SSC examination, (57.6%) mothers passed Secondary School Certificate,

(51.9%) mothers passed Higher Secondary School Certificate, (50.0%) mothers completed graduation which specifies respondents mothers are more educated in urban area than rural area. Some previous studies conducted in Nigeria in rural setting by (Boma et al.,2014).Most fathers (63.6%) have secondary level of education, while most mothers have primary level of education (46.6%),Only 2.6% mothers and 4.7% fathers had tertiary education the proportion of mothers that had no formal education (28.8%) was higher than fathers (9.4%) who had no formal education. This study seems to be similar with this present study.

In existing study, majority of the occupation of respondents fathers were (66.1%) Service holder, (62.9%) were involved in business,(61.5%) were Day laborer, (16.0%) were Farmer and only (33.3%) were Unemployed and (57.1%) were Retired in urban area and in rural area majority (33.9%) were Service holder, (37.1%) were involved in business, (84.0%) were Farmer, (38.5%) were Day laborer, (66.7%) were Unemployed and (42.9%) were Retired.

The occupation of the respondent's mothers were (79.4%) housewife, (20.0%) were service holder, only (0.6%) were involved in business in urban area and in rural, majority (96.2%) were housewife, (1.9%) were Day laborer, only (0.9%) were involved in Business and (0.9%) were farmer. Some previous studies conducted in Nigeria in rural setting by (Boma et al., 2014). A large proportion of fathers were Civil servants (12.6%) while most mothers were farmers (17.3%), the proportion of unemployed fathers 10.47% was higher than unemployed mothers. 4.7%. This study seems to be similar with this present study.

In current study, out of 261 respondents, in urban area, majority of the respondents (61.9%) belonged to the family of 2 to 4 members, (62.5%) respondents belonged to the family of 5 to 7 members, (37.5%) belonged to the family of 8 to 10 members, 1 (25.0%) respondents belonged to the family of >10 members and in rural area, majority of the respondents (38.1%) belonged to the family of 2 to 4 members, (37.5%) respondents belonged to the family of 5 to 7 members, (62.5%) respondents belonged to the family of 8 to 10 members, (75.0%) respondents belonged to the family of >10 members. The mean family member of urban respondents was 5.14 ± 2.405 and The mean family member of rural respondents was 5.4 ± 1.996 . Among 261 respondents(85.8%) were from nuclear type of family and (12.9%) were from joint family and the rest (1.3%) were from extended family in urban area and in rural area, (65.1%) were from nuclear type of family and (27.4%) were from joint family and the rest (7.5%) were from

extended family which reveals that both in urban and rural area nuclear type of family are common.

Some preceding studies conducted in Tangail District, by (Islam et al., 2014). Major participants in urban area (48.6 %, n=35) were contained less than 4 members in each family while major participants in rural area (44.5%, n= 32) were contained 6-7 family member. Thus it indicates that the nuclear family concept was more adopted in urban household compare to rural household in Tangail region. This study seems to be similar with this present study.

In current study, urban area, highest percentage of (51.0%) of the respondents were in the income group of TK. 10001 to 20000 per month per family.(51.0%) were in the income group of TK. 20001 to 30000. (11.0%) were in the income group of TK. 1000 to 10000. (5.8%) were in the income group of TK. 30001 to 40000.(5.2%) were in the income group of TK. 40001 to 50000.The lowest percentage of (0.6%) were in the category of earning TK. 50001 to 60000 per month per family and (0.6%) were in the category of earning TK. 70001 to 80000. The average monthly family income was Tk22500.00 \pm 11551.831 with maximum income was Tk80000 and minimum income was Tk5000.In rural area, highest percentage of (46.2%) of the respondents were in the income group of TK. 1000 to 10000 per month per family. (31.1%) were in the income group of TK. 10001 to 20000.(16.0%) were in the income group of TK. 20001 to 30000. (2.8%) were in the income group of TK. 30001 to 40000. (2.8%) were in the income group of TK. 40001 to 50000.The lowest percentage of (0.9%) were in the category of earning TK. 70001 to 80000. The average monthly family income was Tk16028.30 \pm 12075.522 with maximum income was Tk 80000 and minimum income was Tk3000 which indicates that the monthly income of urban area are higher than the rural area.

Some previous studies conducted in Tangail District by (Islam et al.,2014)The total monthly income of nearly three fourth family in rural area were between BDT 4000-9000 where their average food expenditure between BDT 3000-6000 which are also affect nutritional status in children. Meanwhile the total monthly income of most urban family were more than BDT 24,000 where their average food expenditure more than BDT 15000. A tendency towards an increase nutritional status in under-five children with an increase in the family income. This may due to their ability to spend more money for food which is essential for good health of children. This study is consistent with this present study.

In present study, out of 261 respondents, in urban area, majority of the respondents (91.6%) lived in house type of pakka, (7.7%) respondents lived in house type of semi pakka and the rest (0.6%) respondents lived in house type of Bamboo/Tin wall with tin shed and in rural area, majority of the respondents (47.2%) lived in house type of semi pakka, (30.2%) respondents lived in house type of pakka and the rest (22.6%) respondents lived in house type of Bamboo/Tin wall with tin shed.

In current study, out of 261 respondents, majority of the respondents (91.0%) drunk the Supply water, (7.1%) drunk the Tube-well water and only (1.9%) respondent drunk the Pond water in urban area and in rural area, majority of the respondents (93.4%) drunk the Tube-well water and (6.6%) drunk the Supply water.

Some previous studies conducted in rural school children of Bangladesh by (Nowsin et al., 2014). In this study, among 340 rural school children 41.5% use tubewell water for drinking purpose. This study seems to be similar with this present study.

In present study, out of 261 respondents, majority of the respondents (97.4%) use sanitary latrine with water and only (2.6%) respondents use Sanitary latrine without water and in rural area, majority of the respondents (71.7%) use sanitary latrine with water and (28.3%) respondents use Sanitary latrine without water.

Some previous studies conducted in rural school children of Bangladesh by (Nowsin et al., 2014). In that study, among 340 rural school children 46.2% children had sanitary latrine in their house. This study seems to be similar with this present study.

In current study, Out of 261 respondents in urban area, (95.5%) respondents had habit of hand washing before taking food and (98.1%) respondents had habit of hand washing before taking food which indicates respondents of both areas have habit of hand washing before taking food.

In current study, out of 261 respondents in urban area, majority of the respondents of (63.2%) have Facilities of getting health related information from Television. (35.5%) respondents have Facilities of getting health related information from Internet. (7.75%) respondents have Facilities of getting health related information from Newspaper and only (2.6%) respondents have Facilities of getting health related information from Radio and in rural area, majority of the respondents of (97.2%) have Facilities of getting health related information from Television. (1.9%) respondents had Facilities of getting health related information from Internet and only (0.9%) respondents had Facilities of getting health related information from Radio.

In current study, out of 261 respondents, in urban area, majority of the respondents 88 (58.3%) were underweight, 61 (60.4%) respondents were Normal weight, 5 (62.5%) respondents were overweight and rest 1 (100.0%) respondents were obese and in rural area majority of the respondents 63 (41.7%) were underweight, 40 (39.6%) respondents were Normal weight and only 3 (37.5%) were overweight. The mean BMI of urban area was 18.6037 ± 3.66366 and rural area was 18.1816 ± 2.78130 this study reveals that the prevalence of underweight is slightly higher in urban area than in rural area.

A finding is not consistent with some previous studies accompanied in rural school children of Bangladesh by (Nowsin et al., 2014). The school children in this study were found to be better nourished than the rural Punjab school children as reported in another recent study, 14 where the prevalence of under nutrition was 87.4%. Our study shows 81.8% (278) students were underweight according to BMI, 16.1% (55) students were within normal range and 2.1% (7) students were overweight.

Out of 261 respondents, in urban area, majority of the respondents (65.2%) were taken ruti in breakfast. (63.2%) respondents were taken egg in breakfast. (34.2%) respondents were taken curry in breakfast. (32.3%) respondents were taken vegetables in breakfast. (27.7%) respondents were taken Paratha in breakfast. (24.5%) respondents were taken dal in breakfast. (22.6%) respondents were taken bread in breakfast. (19.4%) respondents were taken rice in breakfast. Rest of the respondents were taken biscuit, muri, chira, khichuri, milk, fruits. In rural area, majority of the respondents (86.8%) were taken rice in breakfast. (73.6%) respondents were taken egg in breakfast. (49.1%) respondents were taken Vegetables in breakfast. (35.8%) respondents were taken Curry in breakfast. (34.0%) respondents were taken ruti in breakfast. (22.6%) respondents were taken dal in breakfast. Rests of them were taken paratha, bread biscuit, muri, chira, khichuri, milk. This study indicates that food habit of urban and rural people are different. Rural people eats rice more but urban people eats ruti in the morning.

Out of 261 respondents, in urban area, majority of the respondents (98.1%) were taken rice in lunch. (77.4%) respondents were taken Fish in lunch. (56.8%) respondents were taken dal in lunch. (56.1%) respondents were taken meat in lunch. (51.6%) respondents were taken Vegetables in lunch. (31.6%) respondents were taken curry in lunch. Rest of the respondents was taken egg,

paratha, khichuri, biriyani. In rural area, majority of the respondents(98.1%)were taken rice in lunch. (80.2%) respondents were taken Fish in lunch. (60.4%) respondents were taken Vegetables in lunch. (56.6%) respondents were taken meat in lunch. (54.7%) respondents were taken dal in lunch.(34.0%) respondents were taken curry in lunch. Rest of the respondents were taken egg, ruti, paratha, khichuri, biriyani.

Out of 261 respondents, in urban area, majority of the respondents(95.5%) were taken rice in dinner.(61.9%) respondents were taken dal in dinner.(57.4%) respondents were taken Fish in dinner.(53.5%) respondents were taken vegetables in dinner. (45.8%) respondents were taken meat in dinner. (37.4%) respondents were taken Curry (vaji) in dinner.(31.0%) respondents were taken Egg in dinner. Rest of the respondents were taken ruti, paratha, khichuri, biriyani, milk. In rural area, majority of the respondents(96.2%) were taken rice in dinner.(66.0%) respondents were taken Fish in dinner.(50.0%) respondents were taken dal in dinner.(48.1%) respondents were taken vegetables in dinner.(39.6%) respondents were taken meat in dinner.(25.5%) respondents were taken Egg in dinner. Rest of the respondents were taken ruti, paratha, khichuri, biriyani,milk

Some previous study that was showed by peoples participation research centre(PPRC)non dietary habit of primary school children in Bangladesh published in Amader shomoy on 22 June 2008 page 8.This report exposed that only 3% of the primary school children were fed meat with rice, 80.8% feed potato, vegetable and dal.the report says that rice with fish was 29.9%, rice with milk 1.6% and 3.4% were fed rice with egg and vegetables. This is a precarious picture of malnutrition of primary school children in Bangladesh. This study may be reliable with the present study.

Some preceding studies was conducted in Khartoum State, Sudan by (Fatima Omer Nabag et al., 2011) There was significant difference between rural and urban school girl's children in dietary intake of legumes, carbohydrates, vegetables, fruit and fruit juices and beverages. This study is consistent with this present study.

Another study was conducted in conducted in Khartoum State, Sudan by (Fatima Omer Nabag et al., 2011). There were significant differences of dietary intake of school girl's children in legumes, carbohydrates, vegetables, fruits and fruit juices and beverages consumption between rural and urban school girls.. These views were in line with the results and indicate there was a

very strong association between family income and nutritional status of children. This study is consistent with the present study.

Another cross-sectional study is consistent with this study was conducted in Cameroon, Africa (Le'onieNzefa Dapi.,2005) carried out in an urban and a rural area. The frequency of in-between meals was significantly higher among urban than rural adolescents. Breakfast and lunch were slightly different between urban and rural adolescents, although this difference was not significant breakfast as a drink with sugar and bread, whereas in the rural area breakfast is composed of leftover traditional food. In contrast to the urban area, milk products are expensive, less available and not considered as a "food" in the rural area. Meat/fish/eggs are more available and affordable in the urban areas, while in the rural areas they are eaten on special occasions owing to high prices and low availability. Vegetables/green leaves are consumed in both areas, but are more processed in the urban area than in the rural area. The high frequency of cereals in urban adolescents may be due to the high consumption of wheat bread.

In current study, out of 261 respondents, (83.9%) respondents were taken evening snacks in urban area, and (58.5%) respondents were taken evening snacks in rural area Out of 261 respondents majority of the respondents(34.8%) were taken noodles in the evening. (29.7%) respondents were taken fries in the evening.(25.8%) respondents were taken Biscuit in the evening. (23.9%) respondents were taken fastfood in the evening.Rest of the respondents were taken chanachur, muri, milk, fruit in urban area and majority of the respondents(29.2%) were taken biscuit in the evening. (24.5%) respondents were taken noodles in the evening.(17.9%) respondents were taken muri in the evening. (12.3%) respondents were taken chanachur in the evening. Rest of the respondents were taken fries, fast food, milk, fruit in rural area

Out of 261 respondents majority of the respondents(74.8%) were taken Cold drinks and Only (12.9%) respondents were taken fruit Juice in urban area and in rural area majority of the respondents (75.5%) were taken Cold drinks and only (16.0%) respondents were taken fruit Juice. (50.3%) were consumed soft drinks sometimes and (91.5%) respondents consumed soft drinks daily. In rural area, majority of the respondents(49.7%) were consumed soft drinks sometimes and only (8.5%) respondents consumed soft drinks daily.

Out of 261 respondents in urban area, majority of the respondents (49.0%) were taken tea.(33.5%) respondents were taken milk.(16.8%) respondents were taken horlicks. (16.1%) respondents were taken coffee and in rural area, majority of the respondents(40.6%) were taken

tea.(44.3%) respondents were taken milk.(12.3%) respondents were taken Horlicks and only (6.6%) respondents were taken coffee

Another cross-sectional was conducted in Cameroon, Africa (Le'onieNzefa Dapi.,2005) carried out in an urban and a rural area. There was a difference between urban and rural adolescents in milk consumption. In the urban area, milk products are available and affordable, and are consumed. This study seems to be similar with the present study.

Out of 261 respondents in urban area, majority of the respondents(78.7%) taken fast food daily and only (40.6%) respondents taken fast food daily in rural area .In urban area, majority of the respondents (82.1%) were taken fast food sometimes and (17.9%) respondents were taken fast food daily. In rural area, majority of the respondents(97.7%) were taken fast food sometimes and only(2.3%) respondents were taken fast food daily. Due to availability, affordability and socioeconomic condition fast food intake is higher in urban area than in rural area.

Some previous study was conducted in Cameroon, Africa (Le'onieNzefa Dapi.,2005) carried out in an urban and a rural area. The high frequencies of junk food and in between meals in urban adolescents could also be due to the fact that they had more pocket money than rural adolescents. This study seems to be similar with the present study.

Out of 261 respondents in urban area, majority of the respondents (68.4%) taken fruit daily and (74.5%) respondents taken fruit daily in rural area Out of 261 respondents in urban area, majority of the respondents(34.2%)were taken banana.(23.2%) respondents were taken apple.(20.0%) respondents were taken guava.(20.0%) respondents were taken seasonal fruit .(12.9%) respondents were taken orange and in rural area, majority of the respondents(50.9%)were taken banana.(28.3%) respondents were taken guava.(27.4%) respondents were taken apple.(20.8%)respondents were taken seasonal fruit.(17.0%) respondents were taken orange which exposes that fruit intake in rural area are slightly higher than urban area due to availability of fresh fruits.

Out of 261 respondents in urban area, majority of the respondents(89.7%) performed physical exercise and (87.7%) respondents performed physical exercise in rural area In urban area, majority of the respondents(51.8%) were performed assembly at school.(45.4%) respondents were played and only (2.8%) respondents were performed physical exercise. In rural area, majority of the respondents (59.1%) were performed assembly at school.(38.7%) respondents were played and only (2.2%) respondents were performed physical exercise. Out of 261

respondents in urban area,(27.7%) respondents were played games in computer and (8.5%) respondents played games in computer in rural area. Although respondents of both areas were performed physical exercise, due to good socioeconomic condition in urban area respondents have facilities for playing computer where rural respondents have less facilities of computer due to economic cause. They have played mostly outside due to availability of playground.

Some previous studies conducted in Khartoum State, Sudan by (Fatima Omer Nabag et al., 2011). In this study, physical activity which requires high energy expenditure, was observed among all rural school children who go to school on foot (100 %), while 71.4 % of urban school girl's children go to school on foot. Therefore, the higher energy expenditure of low socioeconomic status children and probably lower energy intake may lead to smaller size of these children. This study deems to be similar with the present study

.Out of 261 respondents in urban area, majority of the respondents (60.7%) were found to sleep daily for 7 to 10 hours. (48.8%) respondents were found to sleep daily for up to 6 hours and (100.0%) respondents were found to sleep daily for >10 hours. In rural area, majority of the respondents (39.3%) were found to sleep 7 to 10 hours daily. (51.2%) respondents were found to sleep up to 6 hours. The mean duration of sleep was 7.72 ± 1.528 in urban area and the mean duration of sleep was 7.39 ± 1.092 in rural area.

In current study, mean height of male is 158.2549 cm and mean height of female is.

158.6478cm.(Table 30)There is no significant difference of height between male and female.In existing study, mean height 161.3226 and rural mean height 154.3585(Table 33).There is no significant differences of height between urban and rural

Some previous study was conducted in Rohtak, Haryana in rural and urban by (B.M. Vashist et al.,2009).The mean height of rural males in the 13–14 years age group was 1.5 m which was similar to the mean height of urban males in same age group. Urban males showed a higher increase in mean height as it was 1.6 m in comparison to the mean height of 1.53 m for the rural males. Males attained a height of 1.6 m in rural areas and 1.61m in urban areas in the 15–16 years age group. However, females in both urban and rural areas showed a similar increment in mean height at all ages. Height of females increased from 1.51 m to 1.54 m at 13–14 years of age in rural areas and from 1.51 m to 1.55 m in urban areas at 15–16 years of age. Except in the 13–14 years age group, males had a higher mean height than females in both the areas. This might be

due to delayed growth spurt in males than females. This study is consistent with the present study.

This variation was also observed in Rohtak, Haryana conducted by (ANAND K et al.,1999). in which mean height of males (143.86 cm) was less than females (145.44 cm) in the 13–14 years age group after which it increased to 152.61 cm and 160.37 cm at 14–15 and 15–16 years age groups respectively in males as compared to a relatively small gain in height from 149.09 cm at 14–15 years age group to 154.83 cm at 15–16 years age group among females(ANAND K et al., 1999). This study is consistent with the present study.

Another study was conducted by (Venkaiah et al., 2002) in Rohtak, Haryana. The mean height of males increased from 143 cm at 13–14 years age group to 153 cm at 15–16 years age group as compared to 144.1 cm at 13-14 years age group to 149.8 cm at 15–16 years age group respectively in females(VENKAIAH K et al.,2002) observed a mean height of urban males to be 133.7 cm at 10 years which increased to a maximum of 153.6 cm at 15 years. Similarly, in females, mean height increased from 132.8 cm at 10 years to 150 cm at 15 years of age. In all the studies, it was noted that males gained more height than females in all the age groups. This study is consistent with the present study.

In present study, urban underweight (56.8%), normal (39.4%), overweight (3.2%), obese (0.6%) and rural underweight (59.4%), normal (37.7%), overweight (2.8%), obese (0.0%)(Table 32)There is no association of BMI and area of residence

Some previous studies conducted in Tangail District,by (Md. Serajul Islam et al.,2014).The higher percentage of children in rural area (69.44%, n=50) were normal (-0.99 to 1SD) compared to 61.11% (n=44) of children from urban when WHO chart was used. 2.78% (n=2), 4.17% (n=3) and 18.05% (n=13) children were in severely wasting (<-3SD), moderately wasting (-3 to -2 SD) and mild wasting (-1.99 to -1 SD) respectively in rural area. There are no children in urban area those be the belongings of wasting. For mild overweight (-1.99 to -1 SD), there were huge difference between both location while 5.56% (n=4) and 29.17% (n=21) from rural and urban respectively were in this category. Furthermore, 5.56% (n=4) and 4.17% (n=3) children in urban were moderate overweight (2.01 to 3SD) and obese (>3SD) respectively but there were no children found in rural area where children nutritional status is in moderate overweight and obese. This study seems to be similar with the present study.

In current study, urban mean weight 45.2065 and rural mean weight 43.6415 (Table 34).There is no significant differences of weight between urban and rural. Mean weight of male is 47.2941kg and mean weight of female is 42.8239 kg (Table 31).There is significant difference of weight between male and female

A similar study was conducted in Rohtak, Haryana in rural and urban area by (B.M. Vashist et al.,2009).The mean weights among the rural males in the 13-14, 14-15 and 15-16 years agegroups were 38.83 kg, 42.43 kg and 44.34 kg respectively while the same were 40.32 kg, 42.18 kg and 43.23 kg respectively among the rural females in the corresponding age groups. For the same age groups, the mean weights among urban males were 38.59 kg, 46.52 kg and 46.77 kg and among females, the mean weights were 41.7 kg, 44.06 kg and 45.79 kg for the respective age groups. The mean weight was more in urban subjects than rural subjects and more in males than females except in the 13–14 years age group. The values were much higher than those found in the study conducted by (Venkaiah et al., 2002)In the present study, the age-wise mean weights were $30.8 \text{ kg} \pm 5.8 \text{ kg}$, $34.8 \text{ kg} \pm 6.4 \text{ kg}$ and $38.6 \text{ kg} \pm 6.4 \text{ kg}$ in the three respective age groups among males. In females, the values were $32.6 \text{ kg} \pm 5.6 \text{ kg}$, $36.0 \text{ kg} \pm 5.5 \text{ kg}$ and $38.9 \text{ kg} \pm 5.8 \text{ kg}$ in the respective age groups (VENKAI AH K., 2002). In the study conducted by (Thakor et al.,2003) the mean weight of urban males increased from 30.2 kg at 13–14 years age to 36.2 kg at 15–16 years age group. It was lesser than females at all ages in which it ranged from 33.4 kg at 13–14 years to 38.0 kg at 15–16 years of age. This study is consistent with the present study.

In present study mean BMI urban area is 18.6037 kg/m^2 and mean BMI of rural area is 18.1816 kg/m^2 . There is no significant difference of BMI in between urban and rural area.mean BMI of male is 18.7221 kg/m^2 and mean BMI of female is 18.2464 kg/m^2 . There is no significant difference of BMI in between male and female.

A study was conducted in Rohtak, Haryanain rural and urbanarea by (B.M. Vashist et al.,2009) where the mean BMI and the standard deviation among the rural males were 16.97 ± 2.50 , 17.26 ± 1.99 and 17.19 ± 1.55 in the 13–14, 14–15 and 15–16 years age groups respectively while among the rural females, these were 17.56 ± 2.22 , 17.89 ± 2.46 and 18.10 ± 1.86 respectively for the corresponding age groups. Similarly, the mean BMI were 16.95 ± 2.67 , 17.99 ± 2.77 and 17.72 ± 2.40 among the urban males and 18.03 ± 2.46 , 18.8 ± 2.44 and 18.95 ± 2.95 among the urban females in the three respective age groups. It was found that the mean BMI was more in urban

subjects as compared to the rural subjects and more in females than males. Mean BMI and standard deviation of 15.99 ± 1.67 , 16.49 ± 1.18 and 16.83 ± 1.60 in males and 16.93 ± 2.29 , 17.39 ± 1.73 and 19.19 ± 2.47 in females in the respective age groups (ANAND K.,1999). However, mean BMI in the urban subjects where it ranged from 14.8 at 13–14 years age group to 15.3 at 15–16 years age group in urban males and 15.9 to 17.2 in 13–14 and 15–16 years age groups respectively in urban females(THAKOR H.G et al.,2000). This seems to be similar with the present study.

Conclusion

Malnutrition is still common findings in developing countries. Most common is the under nutrition rather than over nutrition. The study found the prevalence of underweight were higher among the children lived in the rural area compared to the children that lived in the urban area. Several factors enable the poor nutritional status of children directly such as low socio-economical status and poor educational background of their parents as well as low protein diets in the rural area. The study found that there is significant difference of weight between male and female lived in the urban and rural area. The study also found that there were no significant difference of BMI in between urban and rural area and in between male and female. Besides that there were no significant differences between urban and rural area with the height and weight of the children. There is no association of BMI and area of residence. On the other hand the study revealed that the nutrition intake among the children from urban and rural area were different. The food habits in rural adolescents were characterized by traditional food, and despite a lower frequency of meat/fish/vegetables, cereals and milk products, were higher in rural than in urban adolescents. In the urban area adolescents ate more fast food that is difficult to obtain due to availability, affordability, distance, or number of supermarkets in rural area. However, frequent consumption of fast-food meals, infrequent breakfast meals, low fruit and vegetable intake, and household food insecurity especially among rural adults. Appropriate nutrition is fundamental, it is very imperative that it has to be safeguarded from the school age. That is why proper awareness has to pay in order to attain good nutritional status. The fight against malnutrition in developing nation by UNICEF therefore should be encourages and public enlightenment campaign should be stepped –up.

ACKNOWLEDGEMENT

I express my profound gratitude to almighty Allah for everything because his blessings enable time to complete this research. I would like to thank the respondents who

took part in this research by giving necessary information and cooperation regarding

the study. I am thankful to Prof. Dr. Shaila Hossain, Departmental Head, Community Medicine, NIPSOM, Prof. Dr. Bipul Krishna Chanda, Prof. Dr. Biazid Khurshid Riaz, Associate Prof. Dr. Manjurul Haque Khan, Phd, Dr. Kazi Jahangir Hossain, Phd to help me in this work.

Finally, I would like to thank my parents, only words cannot truly express my deepest gratitude and appreciation to my family, who always give me support, & without them, my survival in this earth would be impossible.

With Thanks,

Dr. Ishrat Rafique Eshita

GSJ

References

Adolescent Nutrition: A Review of the Situation in Selected South–East Asian Countries(2006)

Available at:

http://www.searo.who.int/LinkFiles/Nutrition_for_Health_and_Development_Executive_Summary.pdf (Accessed 09 April 2009).

Adegun, J.A., Ajayi-Vincent, O.B. and Alebiosu, E.O. (2013) 'Differences in the nutritional status of young school children from public and private owned primary schools in Ekiti state, Nigeria', *European Scientific Journal*, 9(7), pp. 305-312.

Amuta, U.E., Houmsou, J. and Soumay, R. (2012) 'Assessment of Nutritional Status of School Children in Makurdi, Benue State', *Pakistan Journal of Nutrition*, 8(2), pp. 691-694.

- Anand, K., Kant, S. and Kapoor, S.K. (1999) 'Nutritional Status of Adolescent School Children in Rural North India', *Indian Pediatrics*, 36(8), pp. 810-815.
- Bangladesh Bureau of Statistics (2003) *Statistical pocket Book*. Dhaka: Statistics Division, Ministry of planning, Government of the Peoples of Republic of Bangladesh (MOP 2003: 1).
- Das, B.K. and Bisai, S. (2009) 'Prevalence of Under nutrition among Telaga Adolescents: An Endogamous Population of India', *The Internet Journal of Biological Anthropology*, 2(2), pp. 147-157.
- Durning, J.V. and Fidanza, F. (1985) 'Evaluation of Nutrition Status', *Biblhca Nutri. Dieta*, 35(3), pp.20-30.
- Srilakshmi, B., Islam, M.Z., Akhtaruzzaman, M. and Lamberg, A. (1998) *Dietatics*. 3rdedn. New Delhi: New Age International Publishers.
- Nowshin, I. (2002) *Nutrition for the school aged child*. 1stedn. Dhaka: NebGuide Series No.G921086A.
- Emam, S., Mostafa, R., Wassef, O., Mansour, E., Khalaf, N., Ahmed, N., Alsewafy, I., Ahmed, A.A. and Mahmoud, Z. (2005) 'Assessment of nutritional status of some primary school children & their awareness in slum areas', *Alexandria Journal of Pediatrics*, 19(1), pp. 113-119.
- Fotso, J.C. (2007) 'Urbanrural differentials in child malnutrition: Trends and socioeconomic correlates in sub-Saharan Africa', *Health Place*, 13(4), pp. 205-223.
- Ghai, O.P., Gupta, P. and Paul, V.K. (2004) *Essential Pediatrics*. 6thedn. New Delhi: CBS Publishers and Distributors.
- Ghosh, S. and Shah, D. (2004) 'Nutritional problem in urban slum children', *Indian Pediatrics*, 41(4), pp. 682-696.
- Galal, O.M., Ismail, I., Gohar, A.S. and Foster, Z. (2005) 'Schoolteachers' awareness about scholastic performance and nutritional status of Egyptian schoolchildren', *Food Nutrition Bull*, 26(2), pp. 275-280.
- Goon, T.D., Toriola, L.A., Shaw, S.B., Amusa, O. L., Monyeki, A.M., Akinyemi, O.

- and Alabi, A.O. (2011) 'Anthropometrically determined nutritional status of urban primary school children in Makurdi, Nigeria', *BMC Public Health*, 11(3), pp. 769-779.
- Jahan, K. and Hossain, M. (1998) *Nature and Extent of malnutrition in Bangladesh*. Dhaka: Bangladesh National Nutrition Survey, 1995-96. Institute of Nutrition and Food Science, University of Dhaka, July, Part-1, 116:117.
- James, L.F. (1998) 'India-Sector Review of Nutrition Programmes', A background paper prepared for the World Bank. New Delhi.
- Khan, A.Z., Singh, N.L., Hassan, S.B., Sinta, S.N. and Zaheer, M. (1990) 'Anthropometric measurements in rural school children', *JR Society Health*, 11(9), pp. 184-186.
- Kotecha, P.V., Patel, S., Baxi, R.K., Mazumdar, V.S., Misra, S. and Modi, E. (2009) 'Reproductive health awareness among rural school going adolescents of Vadodara district', *Indian Journal for Sexually Transmitted Disease*, 30(7), pp. 949-961.
- Laditan, A.O. and Johnson, A.K. (1999) 'Nutrition and nutritional assessment in childhood: Pediatrics and child health in a tropical region of owerri', *African Educational Services*, 13(2), pp. 162-165.
- Muller, O. and Krawinkel, M. (2005) 'Malnutrition and health in developing countries', *Canadian Medical Association Journal*, 173(3), pp. 279-286.
- Duggan, C., Maqbool, A., Olsen, I. E. and Stallings, V.A. (2008) *Clinical Assessment of Nutritional Status*. 4thedn. Canada: BC Decker Inc.
- Mukhopadhyay, A., Bhadra, M. & Bose, K. (2005) 'Anthropometric assessment of nutritional status of adolescents of Kolkata, West Bengal', *Journal of Human Ecology*, 18(3), pp. 213-216.
- Islam, M.Z., Akhtaruzzaman, M. and Lamberg-Allardt, C. (2004) 'Nutritional status of women in Bangladesh: Comparison of energy intake and nutritional status of a low income rural group with a high income urban group', *Asia Pacific Journal of Clinical Nutrition*, 13(1), pp. 61-68.
- Osibogun, A. (1998) *A handbook of public health nutrition for developing countries*. 2ndedn. Lagos: Akin Osibogun consultants.

- Omigbodun, O.O., Adediran, K.I., Akinyemi, J.O., Omigbodun, A.O., Adedokun, B.O. and Esan, O. (2010) 'Gender and Rural–Urban Differences in the Nutritional Status of in-School Adolescents in South-Western Nigeria', *Journal of Biosocial Science*, 42(5), pp. 653-676.
- Popkin, B.M. (2001) 'The nutrition transition in the developing world', *Development Policy Review*, 21(4), pp. 581–597.
- Rabasa, A.I., Omatara, B.A. and Padomu, M.O. (1998) 'Assessment of nutritional status of children in a Sub-Saharan rural community with reference to anthropometry', *Sahel Medical Journal*, 1(3), pp. 15–18.
- Rao, V.G., Aggarwal, M.C., Yadav, R., Das, S.K., Sahare, L.K. and Bondley, L.K. (2003) 'Intestinal Parasitic Infections: Anemia and Under nutrition among Tribal Adolescents of Madhya Pradesh', *Indian Journal of Community Medicine*, 28(1), pp. 26-29.
- Srivastava, A., Mahmood, S.E., Srivastava, P. M., Shrotriya, V. P. and Kumar, B. (2012) 'Nutritional status of school-age children - A scenario of urban slums in India', *Archives of Public Health*, 70(8), pp. 271-286.
- Sati, V. and Dahiya, S. (2012) 'Nutritional Assessment of Rural School-Going Children (7-9 Years) of Hisar District, Haryana', *Open Access Scientific Reports*, 1(7), 1:363. Doi: 10.4172/scientificreports.363
- Thakor, H.G., Kumar, P., Desai, V.K. and Srivastava, R.K. (2000) 'Physical Growth Standards for Urban Adolescents (10-15 years) from South Gujarat', *Indian Journal of Community Medicine*, 25(2), pp.86-111.
- The State of World's Children* (2004) UNICEF. Available at: http://www.unicef.org/sowc04/files/SOWC_O4_eng.pdf (Accessed 05 October 2012).
- Uppal, M., Kumari, K. and Sidhu, S. (2005) 'Clinical assessment of health and nutritional status of scheduled caste preschool children of Amritsar', *The American Journal of Physical Anthropology*, 7(2), pp. 169-171.
- Venkaiah, K., Damayanti, K., Nayak, M.U. and Vijayaraghavan, K. (2002) 'Diet and Nutritional Status of Rural Adolescents in India', *European Journal of Clinical Nutrition*, 56(11), pp. 1119-1125.

- Vijayaraghavan, K., Brahmam, G.V., Venkaiah, K., Rao, M.K. and Arlappa, N. (2003) *Diet and Nutrition Situation in Drought Affected Areas of Rajasthan*. National Institute of Nutrition. Hyderabad.
- Waterlow, I.C., Buzina, R., Keller, W., Lane, I.M., Nichaman, M.Z. and Tanner, I.M.. (1977) 'The presentation and use of height and weight data for comparing the nutritional status of groups of children under the age of 10 years', *Bulletin of the World Health Organization*, 55(2), pp. 489-498.
- Wassenar, N. (1997) 'Weaning and weaning foods in the Sudan', *The Ahfad Journal*, 5(6), pp. 21-26.
- Country cooperation Strategy for WHO and Egypt 2010–2014* (2010) WHO Regional Office for the Eastern Mediterranean, Cairo. Available at: http://www.who.int/countryfocus/cooperation_strategy/ccs_egy_en.pdf. (Accessed 25 October 2013).
- Zafra, M.J., Carvajal, I., Alcaraz, V.M., Alcaraz, V.E. and Failde, M.I. (1993) 'Assessment of the nutritional status of school children in Gadiz', *Rev Sanid Hig Publica (Madr)*, 67(11), pp. 359 – 367.