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Relationship between University Students' Health Care Practices and Their Classroom Performance

Hina Khalid[1], Shaista Khalid[2], Zubair Ahmad Shah[3]

[1]M Phil Scholar, Department of Education University of Sargodha
[2]Assistant Professor, Department of Education University of Sargodha
[3]Principal, Quaid-e-Azam Academy for Educational Development Sargodha
Email: zashah101@yahoo.com

Health is greatly influenced by diet and physical exercise. For students, good health is one of the contributing factors towards classroom performance including academic achievement. The present study was designed to explore the practices of health care among university students and its relationship with their classroom performance. A sample of 1000 students from 13 departments of the University of Sargodha was selected through stratified sampling technique and 726 respondents returned the questionnaire. A questionnaire was developed to inquire the diet pattern, physical exercise and classroom performance of students. The questionnaire was validated and revised through expert opinion including nutritionists. The research instrument was pilot tested as well and reliability was 0.81. Findings showed that majority of the university students were consuming unhealthy food in the form of junk food. Interestingly students from departments of medical and food sciences scored higher on a measure of junk food scale. It was also found that the students with "more health caring" were good in classroom performance. It was concluded that a major number of students had unhealthy patterns of diet and lacked physical activities. It is recommended to include not only information about health care in daily teaching as well as informal coaching by university teachers.

Keywords: *Healthcare, healthy diet, junk food, physical exercise, classroom performance*

Introduction

Student's health is a strong predictor of their academic performance, and healthy diet pattern and exercise have a positive influence on children's health that ultimately improves academic performance and cognitive abilities and enhance students' learning (Carine, 2005; Stea & Torstveit, 2014). By taking healthy nutrition the individual's intellectual ability, inner satisfaction and holiness increases (Rubi *et al*., 2011). Proper diet is one of the major indicators of high classroom performance and vice versa (Florence *et al*., 2008; Halterman *et al*., 2001). Abolfotouh *et al*., (2007) has also concluded that the majority of university students have improper diet habits by taking fewer fruits, garden-fresh juices, fish, milk and other dairy items.

In Pakistan, 70-80% learners had no plan for a meal and they do not care for their food; while 47% of them frequently avoid their first meal of the day (Arshad et al, 2014). Majority of the learners at university level tend to possess inappropriate eating habits and take a smaller amount of food that makes them ill and sluggish. Keeping in view the importance of health care practices for students, the present study was designed to explore the relationship between health care in terms of diet patterns and classroom performance among university students. The

major objectives of the study were to a) Explore healthcare practices in terms of diet patterns among university students; b) Find out the classroom practices of university students with different diet patterns.

Literature Review

Healthy diet habits enhance the cognitive strength and learning capacity in students, while the students, who take unhealthy diet, become intellectually inactive and lazy that reduces their knowledge capacity (Zuyang, 1995; Clemmons, 1991; Arshad, Ahmed, Yasin, Manj & Umair, 2014). The changing patterns of adolescents and young adults from regular meal to junk food items (Stang, 2008). High intake habit of junk is present among young mostly who are living away from home like in hostels (Ludwig et al., 2001; Mahan & Escott-Stump, 2004). Story et al, (2002) and Taras (2005) have reported that healthy diet is generally assumed to be essential for school performance. The day starts with morning meal and Matthys et al. (2007) considered it the most significant meal of the day but habitually neglected nowadays. Hoyland and Rampersaud, (2009) have concluded that healthy food is essential for health for the mental development and physical growth. Intake habit of breakfast is highly interlinked with the learning habits and high school performance (Adolphus, Lawton& Dye, 2013); similarly Mahoney, Taylor, Kanarek, Samuel (2005) have noted through different studies of researchers that skipping first meal of the day highly affects performance in problem- solving, short-term memory, and thoughtfulness. The function of breakfast is enlightening intelligent and academic achievement (Bellisle, 2004; Bendon & Parker, 1998; Dwyer et.al., 2001; Mathews; 1996; Murphy, et al., 1998). Arulogun and Owolabi (2011) were of the view that the idea of junk meal has stretched out from schools to universities; their day never seems to be complete without observing the "daily ritual" of visiting junk food point especially among university students. In Pakistan also, fast food consumption is gaining acceptance day by day (Quraishi, 2002). But unfortunately, there is little research available on the most important issue of students' health and classroom performance. Hence the present study was needed to investigate the situation of health care practices among university students and highlight its relationship with their academic performance.

Research Design

The study was descriptive in nature and survey design was used to collect data from the respondents. Descriptive research is used to measure the trends of the population regarding some specific phenomenon. Every year a good number of students are enrolled in different universities of Pakistan. As the survey design is the most appropriate design to collect data from the large population, so the survey design was used to gather information regarding health practices of students.

Population, Sample and Sampling

The target population of the study consisted of all the students of public sector universities, medical and engineering colleges. All the students from the University of Sargodha were an accessible population of the study; among them, the sample was selected using multistage

sampling technique from 13 departments. These departments included Mass Communication, History, Engineering, Food Science, Sociology, Social Work, Education, Psychology, Chemistry, Mathematics, Computer Science, English, Zoology and MBBS program. Each department was considered a stratum and from each stratum, 30% of enrolled students of the department were selected randomly. The selected sample was briefed regarding the purpose of research and their consent to participate in research. They were informed that they can quit or refuse to give any information at any stage of the data collection process. The sample comprised of 1000 students from these 13 departments. The rate of return of questionnaires was 72.6% (female students= 85% & male students= 70%). Moreover, some questionnaires were incompletely or invalidly filled and had to be discarded leaving the remaining sample even shorter than expected. The final sample had 726 students.

Research Instrument

The questionnaire was self-developed with the help of literature review, experts and also by taking guideline from a PhD nutritionist from food science department of the same university. The questionnaire included 35 statements (12 for junk or unhealthy meal pattern, 13 statements for classroom performance, and 10 statements regarding diet pattern and physical exercise). The scale was six points Likert type scale (Never=1, Rarely =2, Occasionally=3, Sometime=4, Often=5 to Always=6).

Validation and Pilot Testing of the Research Instrument

The instrument was validated by seeking experts' opinion for the constructs while the reliability was calculated after pilot testing. In order to pilot test, the questionnaire was conducted with 56 students from several departments of the University of Sargodha. The Cronbach's Alpha calculated was 0.816. For unhealthy meal pattern, 23 statements were developed first 7 of them were rejected due to the illogical presentation, grammatical mistakes, repetition and irrelevance to the study. After that more 4 statements were also eliminated and finally 12 were selected for pilot testing by the experts' panel. Furthermore, 11 statements regarding daily eating habits were also developed for exploring students' ways of eating in breakfast, lunch and dinner, and the quality and quantity of their diet. In this sub-section, 15 items were finally selected by experts' opinion and reliability after pilot testing. Relevant to academic performance 21 statements were developed first, and later 13 were selected after pilot testing and by the experts' panel. The following section presents the results of the analysis:

Table 1
Junk Meal Pattern by Students

No	Statement	Always (%)	Often (%)	Sometimes (%)	Occasionally (%)	Rarely (%)	Never (%)	Mean	SD
1	I add extra salt in my meals.	28.96	12.39	15.66	24.23	18.76	28.96	3.55	1.83
2	I take preprocessed items (like mayonnaise, ketchup etc.) in my breakfast.	19.33	15.53	18.54	21.08	25.52	19.33	3.46	1.65
3	I take snacks (cereals, corn flacks, pack of breads etc.) in my breakfast.	14.02	16.16	21.04	27.74	21.04	14.02	2.47	1.51
4	I take cold drink (coca cola, Pepsi etc.) with my meal.	8.58	22.46	20.28	29.02	19.66	8.58	3.56	1.47
5	I drink slush.	16.69	20.18	23.52	23.22	16.39	16.69	3.32	1.53
6	I eat cakes, sweets, chocolate or biscuits.	7.61	19.33	23.90	26.64	22.53	7.61	3.62	1.40
7	I take snacks even when I am not hungry.	16.74	20.34	21.28	26.76	14.87	16.74	3.36	1.56
8	I take burger in my lunch.	12.54	15.74	21.57	30.17	19.97	12.54	3.44	1.52
9	I take pizza.	10.85	13.52	27.79	29.72	18.13	10.85	3.48	1.38
10	I take coffee to make me alert.	19.84	13.39	18.71	27.42	20.65	19.84	3.55	1.66
11	I prefer Junk food like pizza, burger etc. than cooked vegetables.	17.70	17.08	22.67	25.62	16.93	17.70	3.37	1.54
12	In case of slight hunger, I take junk foods like pizza, burger etc.	17.33	17.18	28.37	23.31	13.80	17.33	3.28	1.54

The mean scores on all statements regarding the use of junk food and non-healthy food practices. Pizza (M=3.48) was the mostly used junk food by the students. The use of coffee and cold drinks with mean scores 3.55 and 3.56 respectively also indicated the high use of non-healthy food items by the students. Taking bakery items (M=3.62) and snacks (M=3.36) were also repeatedly used as food by students during the meal times.

Table 2
Classroom Performance of Students

No.	Statement	Always (%)	Often (%)	Sometimes (%)	Occasionally (%)	Rarely (%)	Never (%)	Mean	SD
1.	I actively participate in class.	11.29	9.64	10.74	13.22	38.29	11.29	4.19	1.76

2.	I feel my energy level down when I give presentation	12.38	12.24	15.13	21.18	18.57	12.38	3.98	3.51
3.	I feel fatigued (restless) after attending one class.	11.57	14.46	13.64	19.15	12.12	11.57	3.64	1.54
4.	After a class, I need to eat to increase my learning capacity.	14.74	12.81	16.80	16.67	13.22	14.74	3.65	2.78
5.	I sit mentally alert in class during lectures.	6.34	12.26	13.50	24.38	24.66	6.34	4.17	1.57
6.	I regularly attend classes.	12.12	7.16	10.47	20.80	35.12	12.12	4.33	1.75
7.	I answer attentively to the questions of teacher in class.	6.89	10.33	16.80	17.91	22.18	6.89	4.17	2.79
8.	I participate in class activities.	8.54	13.22	15.70	19.83	20.80	8.54	3.95	1.59
9.	I do assignments on time.	10.34	7.59	12.00	16.69	32.41	10.34	4.28	1.68
10.	I encourage my class fellows to ask questions at the end of my presentation.	12.81	10.06	14.46	18.46	22.73	12.81	3.98	2.05
11.	The quality of my expressions in presentation is effective.	7.44	12.26	17.63	17.63	17.08	7.44	3.93	1.83
12.	I feel uncomfortable during papers due to skipped meals.	16.00	15.03	17.24	17.10	12.69	16.00	3.48	1.64
13.	I feel sleepy in class whenever I skip breakfast.	19.42	14.05	14.88	17.77	14.33	19.42	3.44	1.73

Students actively participate (M=4.19), remain mentally alert in class (M=4.17), show regularity in attending classes (M=4.33), submit assignments in time (M=4.28) whereas there were students who feel sleepy in classes when they come without breakfast (M=3.44), feel energy level down after presentation (M=3.98), need to eat after class (M=3.65), and feel fatigue (M=3.64).

Table 3

Junk Meal Pattern

Variables	Categories	N	Mean	SD	t	Sig
Gender	Male	286	41.23	0.58	-1.368	.731
	Female	440	42.26	0.47		
Residence	Boarders	419	42.04	9.41891	0.584	0.003
	Non-boarders	307	41.61	10.48951		

The table shows the t-value (-1.368) and *p*=.731 that there is no significant difference between the average of male and female students' junk meal pattern. But the t-value (0.584) at *p*=.003 showed that there is a significant difference in showing junk food

used by boarders and non-boarders with slightly higher Mean=42.04 in favour of borders.

Table 4

Junk Meal Pattern and Different Department Students

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	12776.889	13	982.838	12.063	.000
Groups	58008.780	712	81.473		
Total	70785.669	725			

The table 4 shows that the value of F 12.063 at $p<.000$ shows that there is a significant difference among the junk meal patterns of students of different departments of University of Sargodha.

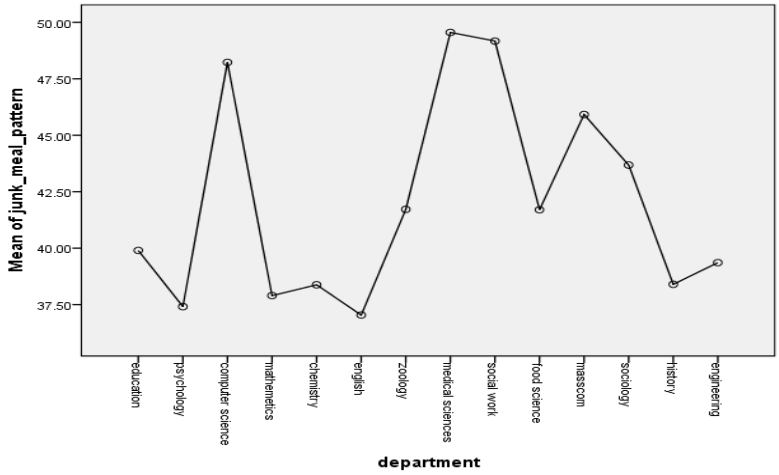

Figure 1: Pattern of junk food among different departments

The figure 1 shows that the students of MBBS program and Department of Social Work and Computer Science have the highest level of junk meal pattern followed by the Department of History, Mass Communication students then Mathematics, Psychology and Education students followed by Zoology, English, Food Science, Sociology students. Chemistry Department students show the lowest level of healthcare practices and academic performance. It is concluded that average of junk meal pattern of MBBS program students is higher than sciences and social sciences students.

Table 5

Junk Meal Pattern and Students from Different Age Groups

	Sum of Squares	*Df*	Mean Square	F	Sig.
Between Groups	789.019	2	394.510	4.075	.017
Groups	69996.650	723	96.814		
Total	70785.669	725			

The table 5 shows that the value of F=4.075 at p < .05 level of significance. It means that there is a significant difference among the junk meal patterns of students of different age groups of the University of Sargodha.

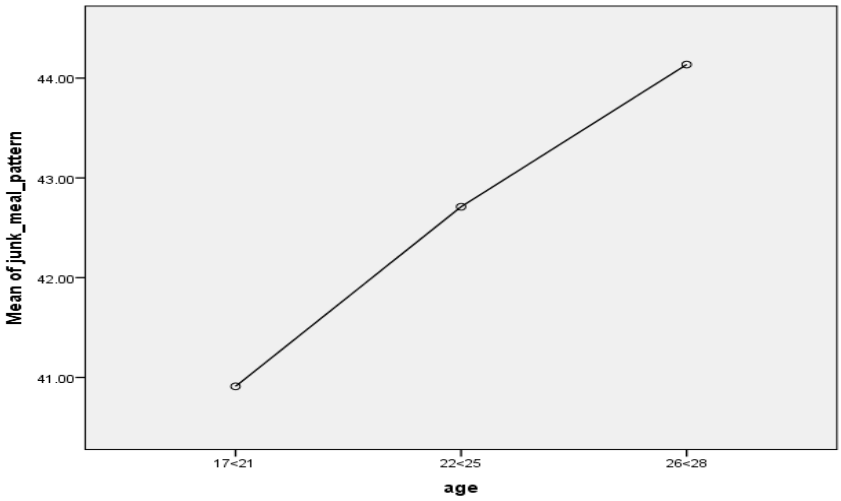

Figure 2: Pattern of junk food consumption and age of the respondents

The figure 2 shows that the students of the age group of 26 to 28 have the highest level of junk meal pattern than the 22 to 25 age group students. The 17 to 21 age group students show the lowest level of junk meal pattern. It is concluded that average of junk meal pattern of 26 to 28 age group students is higher than that of junk meal pattern of 17 to 21 age group students.

Table 6

Diet Pattern and Physical Exercise

Questions	Responses			
How much sugar do you add in one cup of tea	Half teaspoon (3.03%)	1 teaspoon (92.42%)	2 or more than 2 teaspoons (25.21%)	No sugar (20.66%)
How many times you take tea per day	Once a day (31.13%)	Twice a day (35.81%)	3-4 times per day (22.59%)	Don't take tea (10.47%)

How many cold drinks you take per day	1-2 per day (41.73%)	3-4 per day (25.48%)	5 or more per day (24.79%)	Don't take or often (7.98%)
In my diet plan , I always prefer	Low calories product (15.29%)	High calories product (27.13%)	I never observe (57.58%)	_____
How many calories you take per day?	2367 (standardized amount for female) (20.94%)	3367(standardized amount for male) (18.32%)	I don't know (60.74%)	_____
Do you take homemade breakfast?"	Yes (74.66%)	No (24.24%)	_____	_____
Do you do exercise regularly?	Yes (34.71%)	No (65.29%)	_____	_____
Time duration of exercise	10 to 30 minutes (72.04%)	1 or More than 1 hour (5.79%)	Random (18.18%)	_____
Why do you do exercise?	Physical fitness (33.05%)	Activeness (48.2%)	Mental relaxation (34.57%)	Internal peace (48%)
Kind of exercise	Jumping (11.45%)	Running (17.43%)	Cycling (12.5%)	Walk (32.63%)
	Push-ups (8.61%)	Namaz (17.34%)	_____	_____

The majority of the students use 1 teaspoon sugar in tea or coffee and the majority of students take 1-2 cups of tea every day. About 50% of the respondents use 3 to 5 cold drinks every day and more than half of the respondents are not aware of the amount of the calories they are taking daily. Three-fourths of the respondents take homemade breakfast. Two third of the respondents did not do regular exercise. One- third of them took half teaspoon that is good as compared to one or more teaspoon. According to world health organization, in a teacup, the range of sugar is half to one tablespoon.

Table 7

List of Items Breakfast, Lunch & Dinner

Item	Breakfast	Lunch	Dinner
Bread	52.07%	29.34%	46.83%
Chapatti	76.17%	85.12%)	92.27%
Paratha	88.57%	----------	----------
Milk	74.52%	23.02%	52.20%
Dairy items	76.58%	20.25%	16.53%
Pickles, jam, ketchup or preprocessed item	53.31%	46.97%	29.48%
Salan/ curry	71.49%	85.81%	94.90%
Tea	54.68%	71.21%	47.66%
Egg	64.74%	----------	----------
Juices	----------	55.37%	30.99%
Junk food	----------	44.63%	24.52%

The majority of the students in different departments were using chappati and parathas as a major source of food. Processed food and curry/salad is also a

major portion of the breakfast. It seems that the breakfast of the respondents is healthy and according to the needs of the body. Junk food, juices and processed food seemed to replace the traditional lunch and dinner of the students. A positive, negligible but significant relationship was present between junk food pattern and classroom performance.

Table 8

The relationship between Junk Meal Pattern and Classroom Performance

Eating patterns		Classroom Performance
Junk Meal Pattern	Pearson Correlation	.086*
	Sig. (2-tailed)	.020
	N	726

Conclusions and Discussion

The use of junk food and non-healthy food practices was observed among university students. The pizza, coffee, cold drinks, bakery items and snacks were frequently used by students during the meal times. The different pattern of using junk food was reported by different departments. Further analysis showed that the students of MBBS program, social work and computer science had the highest level of consuming junk meal. The students of the department of English were least consumers of junk food. The junk food pattern was also observed among the students of different age. The pattern of using junk food shows that the older students of all departments were consuming more junk food as compared to younger students. It can be concluded that staying at university for longer period develops the habit of junk food among students with the passage of time. Social learning theory seems to be applied here which indicates the social influence on an individual in adopting the habits of the people present in one's closed environment.

The male and female students were using the same pattern of junk food. But the junk food patterns between boarders and non-boarders were different and it was concluded that borders were more habitual of using junk food as compared to non-boarders. It can be concluded that students living in hostels are out of the range of their parental check hence following their own will they choose less healthy diet. Different diet and physical exercise patterns were reported by the students of all departments. The majority of the students were using chappati and parathas as a major type of food. Processed food and curry/salad are also a major portion of the breakfast. It seems that the breakfast of the respondents is healthy and according to the needs of the body. However, junk food, juices and processed food seem to replace the traditional lunch and dinner of the students. Majority of the students do not do physical exercises regularly. It shows that the way of life is rather sluggish among university students because they are not aware of health care principles for healthy living. Consumption of carbonated drinks/fizzy drinks is at a much high level on daily basis among university students. Students were unaware of the calories being consumed by them daily indicating their little attention towards their health. Students who take

breakfast regularly, actively participate in class and stay mentally alert while studying. It was also concluded that they regularly attend classes and submit assignments in time to their teachers. It was further concluded that students who come without breakfast, feel sleepy in class, their energy level gets lower after presentation so they take junk food available at the university cafeteria. It was also concluded that students get fatigued and feel need to eat after class.

Recommendations

Students are not aware of daily intake of quality food. Moreover, they spend most of their time in such activities which demand less physical movements hence they are becoming sluggish and lazy. Keeping in view the findings of the study, it is recommended that awareness about balanced diet and physical exercise should be added to the syllabus of university education in order to improve the health patterns. The findings also reflect that eating of non-healthy junk food and increasing trend of skipping breakfast results in low energy level during the class and presentations. It impacts students' classroom performance making them inactive and less participative. In order to avoid such situation, it is also needed to investigate the magnitude of the potential nutritional risks associated with skipping of main meal intake especially breakfast. The study observed that students residing in hostels are more prone to take junk food as compared to nonresidential students as the major reason may be that hostels do not arrange breakfast for students. This may lead towards unhealthy diet pattern among university students. The canteens also provide unhealthy and junk food items. It is recommended that breakfast may be provided by the hostel administration to help the residents to start the day with healthy food. The same may be arranged for the students at the university cafeteria. The physical activities are being neglected by the majority of the students. It ultimately leads to unhealthy life patterns. University needs to focus on the provision of the activities which flourish health of students. Future research is needed to document the nutritional habits of students and the social determinants that influence this.

References

Abolfotouh, M.A., Bassiouni, F.A., Mounir G.M., & Fayyed R. C. (2007). Health-related lifestyles and risk behaviours among students living in Alexandria University hostels. *Eastern Mediterranean Health Journal.* 13, 376-391.

Adolphus, K., Lawton, C. L., & Dye, L. (2013). The effects of breakfast on behaviour and academic performance in children and adolescents. *Frontiers in Human Neuroscience; 7*, 425/1-28. doi: 10.3389/fnhum.2013.00425

Arshad, N., Ahmed, U., Yasin, G., Manj, Y. N., & Umair, A. (2014). Impacts of Food Intake Pattern on Education Performance of University Students. *Pakistan Journal of Nutrition. 13 (12),* 746-751.

Arulogun, O. S., & Owolabi, O. M. (2011). Fast food consumption pattern among undergraduates of the University of Ibadan, Nigeria. *Implications for Nutrition Education, 1*(6) 89-93.

Bellisle, F. (2004). Effects of diet on behaviour and cognition in children. *British Journal of Nutrition.*. 2:227-232.

Bendon, D., & Parker, P. (1998). Breakfast, blood glucose and cognition. *American Journal of Clinical Nutrition.* 73772.

Dwyer, J. T., Evans, M., Stone, E. J., Feldman, H. A., Lytle, L., Hoelscher, D., Johnson, C., Zive, M., & Yang, M. (2001). Adolescents' eating patterns influence their nutrient intakes. *Journal of the American Dietetic Association, 101*(7), 798-802.

Florence, M. D., Asbridge, M., &. Veugelers, P. J. (2008). Diet quality and academic performance. *Journal of School Health*, 78, 209-215.

Halterman, J. S., Kaczorowski, J. M., Aligne, C. A., Auinger, P. & Szilagyi, P. G. (2001). Iron deficiency and cognitive achievement among school-aged children and adolescents in the United States. *Pediatrics, 107,* 1381.

Liu, J., Hwang, W., Dickerman, B., & Charlene, C. (2013). Regular breakfast consumption is associated with increased IQ in kindergarten children. *Early Human Development, 89* (7), 257–262.

Ludwig, D. S., Peterson, K. E., & Gortmaker, S. L. (2001). The relation between consumption of sugar-sweetened drink and childhood obesity; a prospective observational analysis'. *Lancet*, 357, 505-508

Mahoney, C. R., Taylor, H. A., Kanarek, R. B., & Samuel, P. (2005). Effect of breakfast composition on cognitive processes in elementary school children. *Physiology & Behavior, 85,* 635 – 645.

Mathews, R. (1996). Importance of Breakfast to Cognitive Performance and Health, *Perspectives in Applied Nutrition, 3,* 204-212.

Matthys, C., De Henauw, S., Bellemans, M., De Maeyer, M., & De Backer, G. (2007). Breakfast habits affect overall nutrient profiles in adolescents. *Public Health Nutrition, 10*(4): 413-421.

Quraishi, O. R. (2002). *Lifestyles: The Triumph of Retail Therapy*. Daily Dawn, April 11, 2002, Karachi.

Rubi, D. M., Mamat, A. B., Suliman, N. A., Mohamed, S., & Othman, N. A. (2011). The influence of food intake patterns on the personal appearance. *Int. J. Bus. and Soc. Sci., 2*(4) Center for Promoting Ideas, USA.

Stang, J. (2008). Nutrition in Adolescence In Mahan K., Escott- stump S.,(2008) "*Food And Nutrition Therapy" (*12th ed.), Mc- Graw Hill USA pp 246-259

The story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviours. *J Am Diet Assoc. 102* (3), 40-51.

Taras, H. (2005). Nutrition and student performance at school. *Journal of School Health, 75,* 199-213.

Zuyang, W. (1995). *Minnesota school superintendents and universal school breakfast perspectives and opinions.* St. Paul, MN: Minnesota State Department of Education. (ERIC document reproduction Service No. ED 401995).