International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2015): 6.391

Physical, Dietary, Sedentary, Behavior and Gender Differences among these Factors of Adolescents in Lahore

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Abstract: ***Background: Physical activity and sedentary lifestyle play a major role in determining the health status of a child and the diseases that may overcome him in future to rule out the difference in physical activity and sedentary life style between male and female students. Objective: The purpose of this study is to determine whether there is any difference in physical activity and sedentary life style in male and female students. Methods: cross sectional study was conducted in spirit school, 186 both male and female students of age between12-16 were selected through simple random techniques Questionnaires were circulated among 200 participants and out of that 186 were returned filled completely ATLS scale was used to evaluate physical activity level and life style of participants chi-square test was used to check the significance of the study and p value of 0.05 was considered significant. Results: Males were found to be more active in regular walk per weekwith p value of 0.000 indicating significance of results. Females were found to use stairs more frequently than males, p value of 0.000 showed that the results were significant. Majority of both the male and females were found to walk for 30 minutes.A similar frequency of both male and female mentioned that they have their breakfast 7 times a week. Conclusion: It was concluded that males have more active life style and that females are spending a more sedentary lifestyle they have more irregular meals p value of 0.000 concluded that results were significant.***

Keywords: sedentary life style, physical activity, ADLs (Activities of daily living)

1. Introduction

1.1 Overview

Adolescent is a period where sedentary life style can develop and have destructive effect on health and bad dietary habits become established. The habits being adopted during period of life had a greater impact on gender health having different nutritional consumption and exercise patterns. A study reported that girls are having greater quantity of variations in BMI due to their nutritional intake habits rather thanboys who arehaving variations in BMI due to physical activity as compared to their dietary habits.(1)

Cross sectional and longitudinal research have reported young people with regular break-fast habits are at low risk of obesity rather than who skip breakfast.Kermes et al reported strong relationship between nutritious intake and physical activity patterns. Low fruit and vegetable consumption leads to low level of physical activity. In adolescent unhealthy food intake and sedentary habits leads to risk factors of nutrition.(2)

Breakfast skipping is at alarming high rate now a day's. Adolescent involved in different dietary patterns vary in different cultures. Mealtimeescaping clearly known as not taken a meal. Breakfast avoiding in adolescent is linked with sedentary activities and unhealthy pattern of behaviors. (3)

Weight increase is a major health problem.Its prevalence rate is gradually reaching to its peak. In adolescents high levels of inactivity is found in female. Due to greateramount of food ingesting, TV watching and internet usagesdiscourages the physical activity.(4)

Body related problems like obesity and decline in physical action mainly depend upon the factors like increase in calorie intake or reduce energy outlay. TV watching or video playing are the major factors of physical inactivity.Nutritional intakes like high fats and dense – caloric foods, TV watching and time spending on computer, internet use per day are the factors leading towards the negative impact on health.(5)

Children and adolescent involved in unhealthy activities which contribute towards the factors likeobesity, sleep deprivation and psychological problems .Now a days traditional food intake habits like vegetables, fruity and whole grain products replace with fried food and soft drinks which failure in physical activity.(1)

This type of comparative study of physical motion, sedentary activities and dietary manners in relation to gender differences among adolescents is still not present in Pakistan between the age group of 12-16 years adolescent

1.2 Objectives

The purpose of the study is to determine physical activity, time spending on sedentary activities and their patterns of dietary intake in adolescents and gender differences among these factors

1.3 Hypothesis:

Null Hypothesis:
There is no difference between physical activity and sedentary life style between male and female students.

Research Hypothesis:
There is a difference between physical activity and sedentary life style between male and female students.

1.4 Rationale

The study will provide information to adolescents about their physical activity level, sedentary behavior and dietary habits that will help them to improve these factors in future. It will provide guidance to adolescent to have a healthy life style and implement to intervention if require

1.5 Operational Definition

ATLS is a school –based validated questionnaire which is concerned to collect aequivalent and reliable data which is based on indiscriminately selected adolescent .Objective of ATLS is to provide prevalence rate for obesity and overweight and to examine the physical inactivity, obesity, unhealthy food consumption and lifestyle behavior. It is a standardized method help to collect and analyze important data and to asses wide-ranging lifestyle variables from a greater number of adolescent.(6, 7)

Consist of 47 items: -5 items must measure/ record by researcher included Age, Weight, Height, Waist circumference, student level of study

- Physical action based Questionnaire (6 to 34 items)
- Sedentary activity based question (35 to 37)
- Dietary habits based (38 to 47 items)

Steps included

- Anthropometric measurement
- Physical activity assessment
- Measurement of physical activity and sleeping
- Sedentary activity and sleeping hours
- Dietary habits questionnaire

1.6 Materials and Methods

1.6.1 Study design
Crosssectional studywas conducted.

1.6.2 Setting
Data was collected from 26 branches of the Spirit School of system

1.6.3 Duration
Research was completed within three months after the approval of synopsis.

2.3 Frequency of regular walk per week

1.6.4 Sampling Technique
Simple random technique was used

1.6.5 Sample Size
Data was collected from 186 people, where margin of error was 5%, confidence level was95% and response rate was 85%. Sample size was calculated by using following formula.

$$x = Z(^{c}/_{100})^{2}r(100-r)$$
$$n = {}^{N\,x}/_{((N-1)E^{2}+x)}$$
$$E = \mathrm{Sqrt}[{}^{(N-n)x}/_{n(N-1)}]$$

1.6.6 Inclusion Criteria
Adolescents between the age limit of 12-16 yearwere included

1.6.7 Exclusion Criteria
Students with any kind of traumatic condition or pathological conditions, musculoskeletal injury or any surgical limitation was not included.

1.6.8 Data Collection
Data was collected with the help of Questionnaire comprising of ATLS scale and demographic data. Term nil in table was used when participant was found to not to perform any activity i.e. if he/she mentioned of not going for jogging minutes of jogging were labelled as nil and for those who went for any particular activity but did not mention the minutes of practice of that activity were labeled as none

1.6.9 Ethical consideration
The ethical committee of spirit school of system approved to conduct study in school. All the personal information of participant were kept confidential

1.6.10 Statistical Procedure
Statistical software SPSS statistics version 16 was used. Chai square test was performed for these proportions to examine the differences between genders. A p value of 0.05 was considered significant

2. Results

2.1 Gender

Study included 82(44.1%) of females and 104(55.9%) males.

2.2 Demographic data

Mean age$\pm$ S.D of the participants was 14 $\pm$ 2.03, mean height and weight of participants was 4.72 feet and 36 kg respectively.

Gender		Frequency of regular walk per week					Total
		3 times	4 times	6 times	7 times or more	once	
	Female	27	18	3	0	34	82
	Male	30	24	16	11	23	104
Total		57	42	19	11	57	186

Males were found to be more active with p value of 0.000 indicating significance of results.

2.4 Minutes of walk

Majority of both the male and females were found to walk for 30 minutes. P value of 0.000 indicated that results were significant.

2.5 Frequency of stair usage

Gender		Frequency of stair usage									Total
		2 times	3 times	4 times	5 times	every day	more than 5	none	once	twice	
	Female	0	27	12	5	0	18	1	6	13	82
	male	1	22	19	25	2	26	0	0	9	104
		1	49	31	30	2	44	1	6	22	186

Females were found to use stairs more frequently than males, p value of 0.000 showed that the results were significant.

2.6 Frequency of regular jogging per week

Gender		Frequency of regular jogging per week								Total
		3 times	4 times	6 times	7 times	7 times or more	none	once	twice	
	Female	32	19	3	2	12	3	10	1	82
	male	41	27	12	2	10	2	7	3	104
		73	46	15	4	22	5	17	4	186

Males were found to be more active in regular jogging as compared to females, and significance of 0.000 showed that results were significant.

2.7 Frequency of swimming per week

Gender		Frequency of swimming per week									Total
		3 times	3 times	4 times	5 times	6 times	7 times or more	none	once	twice	
	Female	2	10	5	1	2	4	30	26	2	82
	male	3	26	14	1	1	5	26	25	3	104
		5	36	19	2	3	9	56	51	5	186

At the end of research it was seen that males performed swimming more frequently than females and p value of 0.000 indicated that results were significant

2.8 Frequency of playing moderate intensity sports per week

Gender		Frequency of playing moderate intensity sports per week					Total
		3 times	6 times	None	once	twice	
	female	45	17	18	2	0	82
	male	62	25	16	0	1	104
		107	42	34	2	1	186

Males were found to perform moderate intensity supports more frequently than females and p value of 0.000 showed that results were significant.

2.9 Minutes of playing high intensity sports

Gender	minutes of playing high intensity sports															
	1 hour	10 min	12 min	14 min	15 min	20 min	25 min	3 hours	30 min	40 min	50 min	70 min	90 min	nil	none	Total
female	5	4	1	2	2	12	0	1	32	3	0	3	1	16	0	82
Male	13	12	2	0	0	17	3	2	30	2	1	1	2	16	3	104
	18	16	3	2	2	29	3	3	62	5	1	4	3	32	3	186

Males were found to perform high intensity supports more frequently than females and p value of 0.000 showed that results were significant.

2.10 Frequency of weight training

gender	Frequency of weight training									Total
	2 times	3 times	4 times	5 times	6 times	7 times or more	none	once	twice	
female	1	6	14	1	1	15	5	13	26	82
male	1	19	22	0	5	20	6	6	25	104
Total	2	25	36	1	6	35	11	19	51	186

Males were found to do weight training more frequently than females and p value of 0.000 showed that results were significant.

2.11 Minutes of weight training

gender	Minutes of weight training													Total
	1 hour	10 minutes	15 minutes	16 minutes	20 minutes	24 minutes	30 minutes	40 minutes	45 minutes	5 minutes	half hour	nil	none	
female	4	31	9	1	20	1	4	1	4	2	0	4	1	82
male	8	29	16	2	14	2	10	5	11	0	1	2	4	104
Total	12	60	25	3	34	3	14	6	15	2	1	6	5	186

Males were found to perform weight trainings for longer duration than females and p value of 0.000 showed that results were significant.

2.12 Frequency in engaging house hold work

Gender	Frequency of engaging house hold work						Total
	3 times	4 times	5 times	6 times	none	once	
female	18	12	3	1	10	38	82
Male	38	15	2	4	12	33	104
Total	56	27	5	5	22	71	186

Surprisingly males were also found to be more involved in domestic activities than females and p value of 0.000 proved that results were significant.

2.13 Physical activity

gender	Physical activity									Total
	cricket	cricket, karate	exercise	foot ball	games	nil	tennis	tennis, boxing	video games	
female	2	1	2	5	17	42	7	2	4	82
male	2	1	0	5	33	60	3	0	0	104
Total	4	2	2	10	50	102	10	2	4	186

A similar frequency of both male and female was found to be involved in different indoor games and p value of 0.000 showed that results were significant.

2.14 Frequency of performing physical activity

Gender	Frequency of performing physical activities								Total
	3 times	4 times	5 times	6 times	nil	none	once	twice	
female	14	12	1	2	40	0	11	2	82
male	20	14	3	3	50	4	9	1	104
Total	34	26	4	5	90	4	20	3	186

A similar frequency of both male and female was involved in physical activity for 3 times a week and p value of 0.000 showed that results were significant

2.15 Time of performing physical activities

gender	Time of performing physical activities					Total
	afternoon	evening	morning	no specific time	noon time	
female	21	21	15	21	4	82
male	20	30	17	26	11	104
Total	41	51	32	47	15	186

A similar frequency of both male and female was found to perform their physical activities in time of evening, p value of 0.000 showed that results were significant

2.16 Reason of participating in physical activities

gender	Reason of participating in physical activities					Total
	health	no suitable	recreation others	social competition	to lose weight	
female	42	0	0	37	3	82
male	42	2	5	44	11	104
Total	84	2	5	81	14	186

A similar frequency of both male and female mentioned that they perform physical activities for their health concerns and p value of 0.000 showed that results were significant

2.17 Duration of watching TV

Gender		Duration of watching TV								Total
		1 hour	2 hours	3 hours	4 hours	5 hours	every time	half hour or less	nil	
	female	20	28	10	8	12	0	4	0	82
	Male	6	29	27	12	15	2	9	4	104
Total		26	57	37	20	27	2	13	4	186

A similar frequency of both male and female mentioned that they watch TV for a span of 2 hours and p value of 0.000 showed that results were significant

2.18 Duration of computer usage

		Duration of computer usage									Total
		1 hour	2 hour	3 hours	4 hours	5 hours	every time	half hour or less	more than 5 hours	nil	
gender	female	27	9	10	8	5	0	20	1	2	82
	male	35	16	11	12	13	2	9	2	4	104
Total		62	25	21	20	18	2	29	3	6	186

A similar frequency of both male and female mentioned that they use computer for 1 hour and p value of 0.000 showed that results were significant.

2.19 Hours of sleep per day

gender	Hours of sleep per day										Total
	3 hours	4 hours	5 hours	6 h	6 hour	6 hours	7 hours	8 hours	9 hours	9 hours or more	
female	4	5	4	1	1	31	20	10	1	5	82
male	9	9	9	2	1	31	25	12	2	4	104
Total	13	14	13	3	2	62	45	22	3	9	186

A similar frequency of both male and female mentioned that they take 7 hours of sleep every day and p value of 0.000 showed that results were significant.

2.20 Breakfast taken per week

gender	Breakfast taken week									Total
	3 times	4 times	5 times	6 times	7 times or more	I don't have breakfast	never	once	twice	
female	7	6	7	8	34	2	1	13	4	82
male	12	6	14	11	36	4	1	14	6	104
	19	12	21	19	70	6	2	27	10	186

A similar frequency of both male and female mentioned that they have their breakfast 7 times a week and the p value of 0.000 showed that results were significant

2.21 Frequency of taking sugar drinks per week

gender	Frequency of taking sugar drinks per week									Total
	3 times	4 times	5 times	6 times	6times	7 times or more	None	once	twice	
female	23	8	4	8	1	8	7	14	9	82
male	24	6	10	11	1	22	6	18	6	104
	47	14	14	19	2	30	13	32	15	186

A similar frequency of both male and female mentioned that they take sugar drinks 3 times per week and p value of 0.000 indicated that the results were significant

2.22 Frequency of eating vegetables per week

gender	Frequency of eating vegetables per week								Total
	3 times	4 times	5 times	6 times	7 times	None	once	twice	
female	13	12	15	7	12	2	13	8	82
male	14	11	10	12	21	11	13	12	104
	27	23	25	19	33	13	26	20	186

A similar frequency of both male and female stated that they eat vegetables 7 times a week and p value of 0.000 indicated that results were significant

2.23 Frequency of fresh fruit taken per week

gender	Frequency of fresh fruit intake per week								Total
	3 times	4 times	5 times	6 times	7 times or more	none	once	twice	
female	9	18	3	14	15	1	9	13	82
male	6	37	4	2	33	3	10	9	104
	15	55	7	16	48	4	19	22	186

A similar frequency of both male and female mentioned that they take fruits 7 times or more every week and p value of 0.000 showed that results were significant

2.24 Frequency of dairy products intake per week

gender		Frequency of dairy products intake per week								Total
		3 times	4 times	5 times	6 times	7 times or more	none	once	twice	
	female	19	6	11	6	21	7	5	7	82
	male	13	13	22	9	25	5	9	8	104
		32	19	33	15	46	12	14	15	186

A similar frequency of both male and female had dairy product intake for 7 times or more per week and p value of 0.000 showed that results were significant.

2.25 Frequency of eating fast food per week

gender		Frequency of eating fastfood per week								Total
		3 times	4 times	5 times	6 times	7 times or more	none	once	Twice	
	female	32	7	7	11	2	11	9	3	82
	male	26	8	7	20	19	10	9	5	104
		58	15	14	31	21	21	18	8	186

A similar frequency of both male and female had fast food intake 6 times per week and p value of 0.000 showed that results were significant

2.26 Frequency of eating sweet per week

		Frequency of eating sweets per week								Total
		3 times	4 times	5 times	6 times	7 times or more	none	once	twice	
gender	female	11	18	10	6	11	1	12	13	82
	male	27	19	13	7	15	4	14	5	104
Total		38	37	23	13	26	5	26	18	186

A similar frequency of both male and female mentioned that they eat sweets 4 times a week and p value of 0.000 indicated that results were significant

2.27 BMI

Chi-Square Tests			
	Value	Df	P value
Pearson Chi-Square	51.541[a]	52	.492
Likelihood Ratio	66.987	52	.079
N of Valid Cases	186		
a. 99 cells (93.4%) have expected count less than 5. The minimum expected count is .44. indicated as result were non significant			

A similar frequency of both male and female was found to have a basal metabolic index of 20.83 and thereby was categorized as having normal weight

3. Conclusion

Results of the research were found to be in accordance with previous researches and male adolescents were found to exhibit more active and healthier life style they frequently went for walk, jogging, swimming and outdoor sports activities they were even found to spend more time in doing these activities in comparison to females however females were more prone to stair usage which may be considered as a predictor for their late future poor health. There was no significant difference in dietary habits of males and female. Present study deducted that, by using Pearson Chi-square H1 hypothesis has been proved.

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