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

Kainat Ameer¹, Wajieeha Mahmood², Hafiz Sheraz Arshad³

¹Medical Therapist, Azra Naheed Medical College, Department of Physical Therapy, Main Raiwind Road,, Lahore
²Lecturer, AzraNaheed Medical College, Department of Physical Therapy, Main Raiwind Road,, Lahore
³Assistant Professor, Azra Naheed Medical College, Department of Physical Therapy, Main Raiwind Road,, Lahore

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 week with 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.

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 than boys who are having 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 greater amount of food ingesting, TV watching and internet usages discourage 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 – calorie 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 equivalent 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. 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.

\[ n = \frac{Z^2 \pi (1-\pi)}{E^2} \]

\[ E = \sqrt{\frac{n}{N-1}} \]

1.6.6 Inclusion Criteria
Adolescents between the age limit of 12-16 year were 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 consideraction
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± S.D of the participants was 14 ± 2.03, mean height and weight of participants was 4.72 feet and 36 kg respectively.
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

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

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

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

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>minutes of playing high intensity sports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 hour</td>
</tr>
<tr>
<td>female</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency of weight training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 times</td>
</tr>
<tr>
<td>female</td>
<td>1</td>
</tr>
<tr>
<td>male</td>
<td>1</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>Minutes of weight training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 hour</td>
</tr>
<tr>
<td>female</td>
<td>4</td>
</tr>
<tr>
<td>male</td>
<td>8</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency of engaging house hold work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 times</td>
</tr>
<tr>
<td>female</td>
<td>18</td>
</tr>
<tr>
<td>Male</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cricket</td>
</tr>
<tr>
<td>female</td>
<td>2</td>
</tr>
<tr>
<td>male</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency of performing physical activities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 times</td>
<td>4 times</td>
</tr>
<tr>
<td>female</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>male</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>26</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Time of performing physical activities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>afternoon</td>
<td>evening</td>
</tr>
<tr>
<td>female</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>male</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>51</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Reason of participating in physical activities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>health</td>
<td>no suitable</td>
</tr>
<tr>
<td>female</td>
<td>42</td>
<td>0</td>
</tr>
<tr>
<td>male</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Gender</th>
<th>Duration of watching TV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 hour</td>
<td>2 hours</td>
</tr>
<tr>
<td>female</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>male</td>
<td>6</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>57</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Duration of computer usage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 hour</td>
<td>2 hour</td>
</tr>
<tr>
<td>female</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>male</td>
<td>35</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>25</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>3 hours</th>
<th>4 hours</th>
<th>5 hours</th>
<th>6h</th>
<th>6 hours</th>
<th>7 hours</th>
<th>8 hours</th>
<th>9 hours</th>
<th>9 hours or more</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>31</td>
<td>20</td>
<td>10</td>
<td>1</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>31</td>
<td>25</td>
<td>12</td>
<td>2</td>
<td>104</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>14</td>
<td>13</td>
<td>3</td>
<td>2</td>
<td>62</td>
<td>45</td>
<td>22</td>
<td>3</td>
<td>186</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times or more</th>
<th>I don’t have breakfast</th>
<th>never</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>34</td>
<td>2</td>
<td>1</td>
<td>13</td>
<td>4</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td>12</td>
<td>6</td>
<td>14</td>
<td>11</td>
<td>36</td>
<td>4</td>
<td>1</td>
<td>14</td>
<td>6</td>
<td>104</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>12</td>
<td>21</td>
<td>19</td>
<td>70</td>
<td>6</td>
<td>2</td>
<td>27</td>
<td>10</td>
<td>186</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times or more</th>
<th>None</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>23</td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>8</td>
<td>7</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>male</td>
<td>24</td>
<td>6</td>
<td>10</td>
<td>11</td>
<td>1</td>
<td>22</td>
<td>6</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>14</td>
<td>14</td>
<td>19</td>
<td>2</td>
<td>30</td>
<td>13</td>
<td>32</td>
<td>15</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times</th>
<th>None</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>13</td>
<td>12</td>
<td>15</td>
<td>7</td>
<td>12</td>
<td>2</td>
<td>13</td>
<td>8</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td>14</td>
<td>11</td>
<td>10</td>
<td>12</td>
<td>21</td>
<td>11</td>
<td>13</td>
<td>12</td>
<td>104</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>23</td>
<td>25</td>
<td>19</td>
<td>33</td>
<td>13</td>
<td>26</td>
<td>20</td>
<td>186</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times or more</th>
<th>None</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>9</td>
<td>18</td>
<td>3</td>
<td>14</td>
<td>15</td>
<td>1</td>
<td>9</td>
<td>13</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td>6</td>
<td>37</td>
<td>4</td>
<td>2</td>
<td>33</td>
<td>3</td>
<td>10</td>
<td>9</td>
<td>104</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>55</td>
<td>7</td>
<td>16</td>
<td>48</td>
<td>4</td>
<td>19</td>
<td>22</td>
<td>186</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Frequency of dairy products intake per week</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times or more</th>
<th>none</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td></td>
<td>19</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>21</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td></td>
<td>13</td>
<td>13</td>
<td>22</td>
<td>9</td>
<td>25</td>
<td>5</td>
<td>9</td>
<td>8</td>
<td>104</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Frequency of eating fast food per week</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times or more</th>
<th>none</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td></td>
<td>32</td>
<td>7</td>
<td>7</td>
<td>11</td>
<td>2</td>
<td>11</td>
<td>9</td>
<td>3</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td></td>
<td>26</td>
<td>8</td>
<td>7</td>
<td>20</td>
<td>19</td>
<td>10</td>
<td>9</td>
<td>5</td>
<td>104</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>gender</th>
<th>Frequency of eating sweets per week</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times</th>
<th>6 times</th>
<th>7 times or more</th>
<th>none</th>
<th>once</th>
<th>twice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td></td>
<td>11</td>
<td>18</td>
<td>10</td>
<td>6</td>
<td>11</td>
<td>1</td>
<td>12</td>
<td>13</td>
<td>82</td>
</tr>
<tr>
<td>male</td>
<td></td>
<td>27</td>
<td>19</td>
<td>13</td>
<td>7</td>
<td>15</td>
<td>4</td>
<td>14</td>
<td>5</td>
<td>104</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>Df</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>51.541</td>
<td>52</td>
<td>.492</td>
<td></td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>66.987</td>
<td>52</td>
<td>.079</td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>186</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

References


Author Profile

Kainat Ameer is from AzraNaheed Medical College, Department of Physical Therapy, Main Raiwind Road,, Lahore

Wajeeha Mahmood is Lecturer, AzraNaheed Medical College, Department of Physical Therapy, Main Raiwind Road,, Lahore

Hafiz Sheraaz Arshad is Assistant Professor, AzraNaheed Medical College, Department of Physical Therapy, Main Raiwind Road,, Lahore