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Study on the sedentary lifestyle of adolescents in Khulna city

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Abstract

Objective: This cross-sectional study was carried out among the students of Rev. Paul's High School, Gallamari, Khulna to assess the adolescents' sedentary lifestyle and also the related factors. **Methods:** The sample size was 217 which were selected by systematic sampling method. Data were collected using a semi-structured questionnaire by a face-to-face interview conducted by the interviewer. **Results:** In this study, it was found that only 43.3% of respondents had sedentary habits (watching TV, internet browsing, playing video games and not liking to go outside for playing in the field). Comparatively majority of girls (57.8%) were associated with sedentary habits. Otherwise whose mothers are educated were not associated with sedentary habits (62.9%). In this study, it was observed that among those who like fast foods, the majority had sedentary habits (24.5%). Also, about 64.3% of respondents who have sedentary habits were unwilling to perform outdoor physical activities like playing. **Conclusion:** The findings of the result might help develop awareness among adolescents as well as parents and teachers regarding the sedentary lifestyle to reduce the risk of adverse health outcomes as well as to know about the associated factors. Thus, it will be helpful to minimize the factors from the daily lifestyle and become healthy citizens.

Keywords: Sedentary lifestyle, Adolescents.

Introduction

A sedentary lifestyle is a type of lifestyle involving little or no physical activity. A person living a sedentary lifestyle is often sitting or lying down while engaged in activities like reading, socializing, watching television, playing video games, or using a mobile phone/computer for much of the day. A sedentary lifestyle can potentially contribute to ill health and many preventable causes of death.[1, 2]

Screen time is a modern term for the amount of time a person spends looking at a screen such as a television, computer monitor, or mobile device. Excessive screen time is linked to negative health consequences.[3, 4]

Effects of sedentary work or lifestyle can be either direct or indirect. One of the most prominent direct effects of a sedentary lifestyle is an increased Body mass index (BMI) leading to obesity. A lack of physical activity is one of the leading causes of preventable deaths worldwide.[5]

At least 300,000 premature deaths and $90 billion in direct healthcare costs are caused by obesity and sedentary lifestyle per year in the US alone.[6] The risk is higher among those that sit still for more than 5 hours per day. It is shown to be a risk factor on its own regardless of hard

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exercise and BMI. People that sit still for more than 4 hours per day have a 40 percent higher risk than those that sit fewer than 4 hours per day. However, those that exercise at least 4 hours per week are as healthy as those that sit for fewer than 4 hours per day.[7, 8]

Indirectly, an increased BMI due to a sedentary lifestyle can lead to decreased productivity and increased absenteeism from necessary activities like work.[9] Missing work and not being productive results in obvious short-term and long-term effects like less income and job security.

A sedentary lifestyle and lack of physical activity can contribute to or be a risk factor for:

Anxiety, cardiovascular diseases, migraines, breast cancer, colon cancer, computer vision syndrome only for computers and tablets, depression, diabetes, gout, high blood pressure, lipid disorders, skin problems such as hair loss, obesity, osteoporosis, scoliosis, spinal disc herniation (low back pain) and increased mortality rates in adults.

Current children and adolescents fail to meet the recommended physical activity level (at least 1 h/day of moderate-vigorous physical activity), with more time spent on sedentary behaviours (≤2 h/day of total screen time).[5] Sedentariness may be analyzed by considering individuals not meeting the physical activity (assessed by questionnaires or objective methods) guidelines or by the assessment of different sedentary behaviours, such as television (TV) watching, internet browsing, computer use and playing electronic games. When attempting to study each approach, they present different determinants. For instance, in the US adolescents' physical activity was associated with environmental factors and sedentary behaviours with socio-demographic factors.[10]

Adolescents heavily engaged in daily sedentary behaviours present poor health status. TV viewing is associated with adiposity, an impaired metabolic risk score, hypercholesterolemia, high body mass index (BMI), low cardiorespiratory fitness and hypertension.[11]

Scarce research has been carried out in Europe about the prevalence and determinants of sedentary behaviours in children and adolescents. In a large survey conducted in several European countries, boys were more likely to watch TV regularly than girls. In Spain, the enKid study found that children and adolescents averagely watched TV 1.57 h/day and played electronic games 0.27 h/day.[12] Moreover, a high maternal educational level was associated with less TV time. More insight into the link SES–sedentary behaviours could help to reduce the time Spanish adolescents spent in different sedentary pursuits.

The result of this study will be helpful to parents as well as teachers to know about the factors more related to sedentary lifestyles among adolescents. This study will be helpful to adolescents to know about the sedentary lifestyle and related factors to make them more aware of this.

Methodology

This was a cross-sectional type of descriptive study. Data were collected from adolescent (10-16years) school students of Rev. Paul's High School, Gallamari, Khulna. A total of 217 selected students were eligible for this study from the defined area. Systematic probability sampling technique was used in this study. A written semi-structured questionnaire was administered by the interviewer. The frequency distributions of the entire variables were checked by using SPSS 20.0 program for Microsoft Windows. For tabular and graphical representation, Microsoft word and Microsoft excel were used. Descriptive variables were explained with mean and standard deviation. Statistical significance was assessed by applying relevant statistical tests at an appropriate probability level ($p<0.05$).

Results

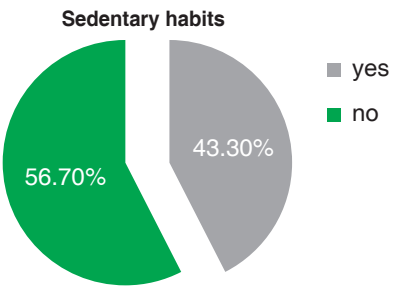

Figure 01: Distribution of the respondents by their sedentary habits

It was observed that 43.30% of respondents had sedentary habits and 56.70% did not (Figure 01).

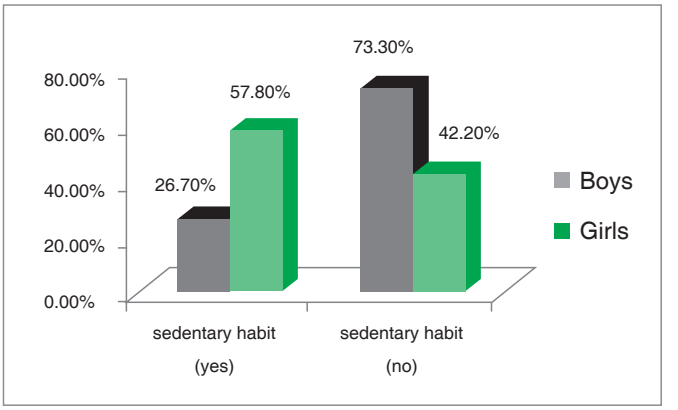

Figure 02: Relation between sedentary habits along with gender difference of respondents

It was found that about 43.3% of respondents had sedentary habits, out of them 57.8% were girls. A statistically significant* relation was found between adolescents' sedentary behaviors along with their gender difference.

*Chi-square test was performed, $p<0.05$

Table 01: Relation between sedentary habits and education level of the respondents' mothers

Mother's education level	Sedentary habits		Total	Inference
	Yes	No		
Up to class v	12 (50.0%)	12 (50.0%)	24 (11.1%)	p> 0.05
Class vi-higher secondary	49 (47.1%)	55 (52.9%)	104 (47.9%)	
Graduate-above	33 (37.1%)	56 (62.9%)	89 (41.0%)	
Total	94 (43.3%)	123 (56.7%)	217 (100.0%)	

It was found that the majority (56.7%) had no sedentary behaviour, among them 62.9% of respondent's mothers had formal education. The test revealed that there was statistically no significant relation between the education level of mothers and adolescents' sedentary behavior (Table 01).

Table 02: Relation between sedentary habits and outdoor sports among respondents.

Outdoor sports	Sedentary habit		Total	Inference
	Yes	No		p< 0.05
Yes	58 (36.0%)	103 (64.0%)	161 (74.2%)	
No	36 (64.3%)	20 (35.7%)	56 (25.8%)	
Total	94 (43.3%)	123 (56.7%)	217 (100.0%)	

It was found that about 25.8% of respondents did not like to play outdoor sports; out of them, about 64.3% of respondents had sedentary habits. The test revealed that there was a statistically significant relation between adolescents' sedentary behaviour and playing outdoor sports (Table 02).

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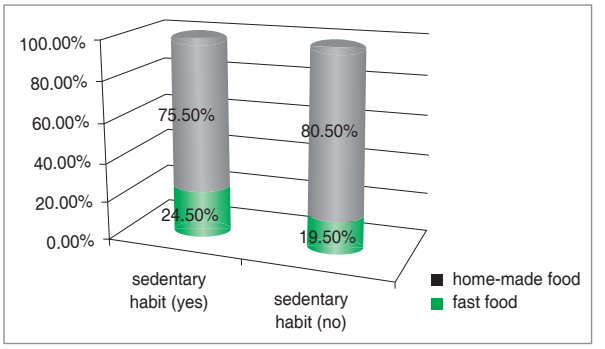

Figure 03: Relation between sedentary habits and food habits among respondents

It was found that about 21.7% of respondents had snacking habits (fast food/dairy food) at least three times per week. Out of them, 24.5% have sedentary habits. The relationship between predictor and eating habit was tested using Pearson's correlation method. It represents that the sedentary habits of respondents and their eating habits were not statistically correlated ($p>0.05$) [Figure 03].

Discussion

The term sedentary lifestyle was used to characterize reduced energy expenditure through lack of or reduced physical activity and is associated with substantial health consequences.[13] It is also linked with modern society lifestyles, which have drifted towards sedentary habits that are more harmful to health.[14] New media technologies, such as television (TV), computers and games consoles, have provided new opportunities for sedentary activity.[15]

One study has assessed that sedentary behaviour among Balearic Islands adolescents is high (37.1%), mainly among girls (22% boys vs 50.8% girls),16 but lower than those of American (55.9%), Brazilian (56.9%) and other European adolescents.[10]

In this study out of 217 respondents, it was observed that 43.3% of respondents had sedentary habits in which boys were more active (72.3%) than girls in all age groups, and sex differences were accentuated with age for a significantly declined physical activity practice in girls.

Adolescence is the beginning of the decline of physical activity practice, which decreases annually by about 2.7% among boys and 7.4% among girls (between the ages of 10 and 17).[15] Among Balearic Islands adolescents, the physical activity practice decreases annually, but less than among other adolescents. These results confirm that age and sex are important determinants of physical activity practice among the adolescent population.[14]

In the current study, the intergenerational association between parental educational and professional levels with sedentary behaviour was observed by univariate, but not multivariate analysis. Parental education and professional levels have also been associated with adolescents' sedentary behavior.[8]

That finding is also similar to the finding of the current study - the majority (56.7%) of respondents have no sedentary habit, and among them 62.9% of respondent's mothers have higher educational levels. So it was assumed that with increased education level of the mother, child's sedentary habit decreases.

Current children and adolescents fail to meet the recommended physical activity level (at least 1 h/day of moderate-vigorous physical activity), with more time spent on sedentary behaviors (2 h/day of total screen time).[14] In another study carried out by Uddin R, it was found that 17% of the participants were performing moderate to vigorous physical activity (MVPA) with a significantly higher proportion of males than females (27% vs. 6%, $p<.0001$). Four out of five young adults in Dhaka City did not meet the physical activity recommendations.[17]

Furthermore, another recent study has shown that television viewing (sedentary activity) and physical activity appear to be separate entities that are independently associated with metabolic risks.[9]

In the current study, it was found that there was an association between sedentary behavior and physical activity. About 64.3% of respondents who had sedentary habits did not like to play outdoor sports (physical activity).

Sedentary behaviour has been associated with food choice; and cereals, fruits and vegetables often appear in the diet of active adults and

children. Children who follow a healthy diet are those who might also maintain high levels of physical activity. In a previous study, it was found that sedentary adolescents showed the lowest adherence to the Mediterranean dietary pattern.[18]

The present results showed that sedentary adolescents often consumed fewer cereals, and fresh fruits, whereas high-fat foods appeared often in their diet. About 24.5% of respondents who had sedentary habits were more prone to eating fast food. Moreover, we have lately described two major dietary patterns in the Balearic Islands adolescent population: the 'Western' and the 'Mediterranean' pattern.[1] In that study we observed that adolescents who spent ≥4h per day using media-screen showed higher mean intake for most of the food categories included in the 'Western' dietary pattern (e.g. dairy desserts, red meat, sausages, bread, rice dishes, fruit juices, soft drinks, high-fat food, sweets and chocolates), whereas mean intake for yogurt & cheese, fruit and vegetables was lower in them.

Conclusion

The prevalence of sedentary behavior among adolescents is high, mainly among girls. Age, sex, parental education and professional levels, dissatisfaction with body size and poor-quality diet are important factors of physical activity practice among the adolescent population. Adolescents are priority targets for action against obesity and related co-morbidities, and they should be more aware of the health benefits of physical activity practice.

Parental education and occupation were differently associated with adolescents' sedentary behaviors, with parental occupation having more influence than parental education. These findings could be used to deliver messages for reducing sedentary behaviors in different social classes. To reduce the prevalence of sedentary behaviors, efforts should be focused on adolescents whose parents have a lower occupational level.

The relationship between social status and transition from experimentation to more regular engagement in risk behaviors during adolescence and early adulthood needs to be investigated.

The present study has found that sedentary behavior is highly prevalent among adolescents especially among adolescents from affluent homes. Low levels of physical activity as well as sedentary behaviour are significantly associated with parental education level.

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