Prevalence of Physical Activity among High School Children: A Survey

[1]J Andrews Milton MPT
[2]Dr. A Turin Martina
[1]Professor, Bethany Navajeevan College of Physiotherapy, Thiruvananthapuram,
[2]Associate Professor, PG & Research Department of Rehabilitation Science, Holy Cross College(Autonomous), Tiruchirappalli

Abstract

World Health Organization emphazises that promotion of physical activity must be the main objective in public health . Healthcare workers are in a better position for counseling of appropriate health behaviors including physical activity. The single most common cause of obesity in developed countries is physical inactivity, rather than amount and nature of food intake or other factors. Recent research clearly states that sedentary lifestyle with increased caloric intake is associated with the increased risk of obesity. Increasing the physical activity should result in a decrease in the prevalence of obesity. Physical activity has also been shown to improve bone mineral density, increase school performance, and have a positive effect on mental health.

Objective

To determine the prevalence of physical activity among High school children

Materials and Methods

100 students studying between 9th grade to 12th grade from Bethany Navajeevan Vidyalaya , Thiruvananthapuram have been included in this study. Physical Activity Questionnaire for adolescents(PAQ-A) has been given to all the students. Physical Activity Questionnaire for adolescents is a self administered, 7 day recall questionnaire that can be administered in a classroom setting and provides a summary of physical activity. A brief introduction has been given about the physical activity and the details in the questionnaire before filling the questionnaire.

Result

The result of the survey shows that **t**here is a significant level of decreased physical activity among the high school students

Conclusion

The World Health Organization, recommends that for good health, children should do physical exercise , at least one hour a day. Since in the present survey majority of the school students having less physical activity, they are more prone for lifestyle diseases such as obesity. Further studies shall be done to know the impact of physical activity in life style diseases.

Key words

Physical Activity, Adolescents, Obesity, Physical Activity Questionnaire

Background

Insufficient physical activity is one of the 10 leading risk factors for global mortality. People who are insufficiently physically active have a 20% to 30% increased risk of all-cause mortality compared to those who engage in at least 150 minutes of moderate intensity physical activity per week, or equivalent, as recommended by WHO. Regular physical activity reduces the risk of ischemic heart disease, diabetes, breast and colon cancer. Additionally, it lowers the risk of stroke, hypertension, and depression. Furthermore, physical activity is a key determinant of energy expenditure and thus fundamental to energy balance and weight control. Globally in 2010, 23% of adults aged 18+ years were insufficiently active (men 20% and women 27%). Overall, older adults were less active than younger adults: 19% of the youngest age group did not meet the recommended level of physical activity, compared to 55% of the oldest age group. However, young women were slightly less active

than middle-aged women. The WHO Eastern Mediterranean Region (31%) and the Region of the Americas (32%) had the highest prevalence of insufficient physical activity, while the prevalence was lowest in the South-East Asia (15%) and African (21%) regions. Across all regions, women were less active than men, with differences in prevalence between men and women of 10% and greater in the Eastern Mediterranean Region and the Region of the America. The prevalence of insufficient physical activity rose according to the level of income. High income countries had more than double the prevalence compared to low income countries for both men and women, with 41% of men and 48% of women being insufficiently physically active in high income countries as compared to 18% of men and 21% of women in low income countries. Nearly every second woman in high income countries was insufficiently physically active. These data may be explained by increased work and transport-related physical activity for both men and women in the low and lower middle income countries. The increased automation of work and life in higher income countries creates opportunities for insufficient physical activity[1].World Health Organization emphazises that promotion of physical activity must be the main objective in public health . Healthcare workers are in a better position for counseling of appropriate health behaviors including physical activity. The single most common cause of obesity in developed countries is physical inactivity, rather than amount and nature of food intake or other factors. Recent research clearly states that sedentary lifestyle with increased caloric intake is associated with the increased risk of obesity[2]. Increasing the physical activity should result in a decrease in the prevalence of obesity[3,4]. Physical activity has also been shown to improve bone mineral density, increase school performance, and have a positive effect on mental health.

School going adolescents aged 11–17 years

Compared to their inactive peers, children and adolescents doing at least 60 minutes of moderate- to vigorous-intensity physical activity daily have higher levels of cardiorespiratory fitness, muscular endurance and strength. Documented health benefits of regular physical activity among young people also include reduced body fat, more favourable cardiovascular and metabolic disease risk profiles, enhanced bone health, and reduced symptoms of anxiety and depression. Globally, 81% of school going adolescents aged 11–17 years were insufficiently physically active in 2010, i.e. they did less than 60 minutes of moderate- to vigorous-intensity physical activity daily, as recommended by WHO. School going adolescent girls were less active than boys, with 84% versus 78% not meeting WHO recommendations. Estimates of physical activity of adolescents are for school going adolescents due to lack of data on adolescents in the general population in most countries. Adolescents from the WHO South-East Asia Region showed by far the lowest prevalence of insufficient physical activity (74%). Levels of insufficient physical activity were highest in the Eastern Mediterranean Region, the African Region and the Western Pacific Region (88%, 85% and 85%, respectively). Adolescent girls were less active than adolescent boys in all WHO regions. There was no clear pattern of insufficient physical activity among school going adolescents across income groups; the prevalence was highest in upper-middle-income, and lowest in lower-middle income countries.[1]

Need of the Study

Evidence-based research indicates that physical activity reduces adiposity in both overweight and normal children, improves musculo-skeletal and cardiovascular health and fitness, positively influences concentration and memory and thereby on intellectual performance. There are only a few studies which have evaluated any dimension of physical activity in Indian children.

Objective

To determine the prevalence of physical activity among High school children

Research Design

Survey method is adopted with descriptive design

Materials and Methods

100 students studying between 9th grade to 12th grade from Bethany Navajeevan Vidyalaya , Thiruvananthapuram have been included in this study. Physical Activity Questionnaire for Adolescents (PAQ-A) has been given to all the students.

The PAQ-A is a self-administered, 7-day recall instrument[5]. PAQ-A have been supported as valid and reliable measures of general physical activity levels in adolescence**.** The PAQs' measurement of general physical activity levels is one of its strengths because it is difficult to precisely measure intensity, frequency, and duration of young people's activities, especially with self-report[6,7].It was developed to assess general levels of physical activity for high school students in grades 9 to 12 and approximately 14 to 19 years of age. The PAQ-A can be administered in a classroom setting and provides a summary physical activity score derived from eight items, each scored on a 5-point scale. Scoring of PAQ-A: Find an activity score between 1 and 5 for each item (excluding item 9)

Five Steps in scoring:

1) *Item 1 (Spare time activity)*

- Take the mean of all activities ("no" activity being a 1, "7 times or more" being a 5) on the activity checklist to form a composite score for item 1.

2) *Item 2 to 7 (PE, lunch, right after school, evening, weekends, describes you best)*

- The answers for each item start from the lowest activity response and progress to the highest activity response

- Simply use the reported value that is checked off for each item (the lowest activity response being a 1 and the highest activity response being a 5).

3) *Item 8*

- Take the mean of all days of the week ("none" being a 1, "very often" being a 5) to form a composite score for item 8.

4) *Item 9*

- Can be used to identify students who had unusual activity during the previous week, but this question is **NOT** used as part of the summary activity score.

5) How to calculate the final PAQ-A activity summary score

- Once you have a value from 1 to 5 for each of the 8 items (items 1 to 8) used in the physical activity composite score, you simply take the mean of these 8 items, which results in the final PAQ-A activity summary score. A score of 1 indicates low physical activity, whereas a score of 5 indicates high physical activity.

A brief introduction has been given to the students about the physical activity and the details in the questionnaire before filling the questionnaire. After the questionnaire has been filled by the students, the collected data was analyzed using SPSS.

Findings

Table 1: Gender Distribution

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	33	33.0	33.0	33.0
	female	67	67.0	67.0	100.0
	Total	100	100.0	100.0	

Table2: Distribution of Age

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	14.00	19	19.0	19.0	19.0
	15.00	31	31.0	31.0	50.0
	16.00	26	26.0	26.0	76.0
	17.00	23	23.0	23.0	99.0
	18.00	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

Table3: Mean Values of Scores of PAQ-A Questionnaire

		Total PAQ – A Score	Spare time PAQ– A score	Physical Education class PAQ – A score	Lunch time PAQ – A score	Right after school PAQ – A score
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean		2.6300	1.9100	3.6400	1.7000	2.7300
Std. Deviation		.73382	.84202	1.25142	.79772	1.33223
Minimum		1.00	1.00	1.00	1.00	1.00
Maximum		4.00	5.00	5.00	5.00	5.00

Table 4: PAQ-A Score during Physical Education Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	7	7.0	7.0	7.0
	2.00	10	10.0	10.0	17.0
	3.00	30	30.0	30.0	47.0
	4.00	18	18.0	18.0	65.0
	5.00	35	35.0	35.0	100.0
	Total	100	100.0	100.0	

Table 5: PAQ-A Score during Lunch time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	44	44.0	44.0	44.0
	2.00	47	47.0	47.0	91.0
	3.00	6	6.0	6.0	97.0
	4.00	1	1.0	1.0	98.0
	5.00	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Table 6: PAQ-A Score right after School Time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	21	21.0	21.0	21.0
	2.00	25	25.0	25.0	46.0
	3.00	31	31.0	31.0	77.0
	4.00	6	6.0	6.0	83.0
	5.00	17	17.0	17.0	100.0
	Total	100	100.0	100.0	

Table 7: PAQ-A Total Score

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	4.0	4.0	4.0
	2.00	40	40.0	40.0	44.0
	3.00	45	45.0	45.0	89.0
	4.00	11	11.0	11.0	100.0
	Total	100	100.0	100.0	

33 girls and 67 boys participated in the Survey (Table:1). 19 students were around 14 years of age. 31 students were 15 years of age. 26 students were around 16 years of age. 23 students were around 17 years of age. 1 student was 18 years of age (Table: 2).The mean value of physical activity score during spare time was 1.91 with a standard deviation of .84, the minimum score was 1 and the maximum score was 5. The mean value of physical activity score during physical education class was 3.64 with a standard deviation of 1.25, the minimum score was 1 and the

maximum score was 5. The mean value of physical activity score during lunch time was 1.70 with a standard deviation of .79, the minimum score was 1 and the maximum score was 5. The mean value of physical activity score right after the school time was 2.73 with a standard deviation of 1.33, the minimum score was 1 and the maximum score was 5. The mean value of total physical activity score was 2.63 with a standard deviation of .73, the minimum score was 1 and the maximum score was 4 (Table:3). While analysing the total score 4 percentage of students having a total score of 1, i.e., they do no physical activity or very less physical activity, 40 percentage of students scored 2, i.e., minimal level of physical activity, 45 percentage of students scored 3, i.e., moderate level of physical activity, and 11 percentage of students scored 4,i.e., high level of physical activity and no one scored 5, i.e., very high level of physical activity (Table: 7). Based on the analysis of descriptive statistics, the result of the survey shows that **t**here is a significant level of decreased physical activity among the high school students.

Discussion

35 percentage of students were very active during physical education classes having the physical activity score of 5 and 30 percentage of students were having moderate level of physical activity having the physical activity score of 3 (Table:4). During lunch time 2 percentage of students were having the physical activity score of 5, 1 percentage of students were having the physical activity score of 4 and 6 percentage of students were having the physical activity score of 3 (Table:5). Right after the school time 17 percentage of students were having the physical activity score of 5 , 6 percentage of students were having the physical activity score of 4 and 31 percentage were having the physical activity score of 3, remaining were having the score of 1 and 2 (Table: 6). These results show that majority of the students were very highly active only during the physical education classes. Remaining spare time they were doing very less or moderate level of physical activity. Also the mean value of total physical activity score was 2.63 with a standard deviation of .73, the minimum score was 1 and the maximum score was 4

Conclusion

The World Health Organization, recommends that for good health, children should do physical exercise , at least one hour a day. Since in the present survey majority of the school students having less physical activity, they are more prone for lifestyle diseases such as obesity.

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