

Awareness & Attitude Towards Physical Activity Among Pediatric Population in Pakistan

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Highlights:

- Lack of awareness and inactive attitude towards physical activity is concluded.
- Awareness and attitude towards physical activity among pediatric population in Pakistan was determined.
- Awareness of healthy lifestyles by promoting physical activity may be addressed by this study.

Abstract:

The importance of Physical Activity (PA) and its beneficial outcomes regarding health are well known facts. Modernization of the world has strong impact on lifestyles and behaviors of all individuals falling in different age groups. Children start learning routine activities in early childhood that turns into their habits in adulthood.

Objective:

This study aimed to determine awareness and attitude towards physical activity among pediatric population in Pakistan.

Methodology:

Total 62 children participated in this study from two institutes of Lahore, Pakistan having age 5-12 years. Subjective measures (self-report) and objective measures (pedometer steps) were collected through Children Physical Activity Questionnaire (C-PAQ) and analyzed statistically.

Results:

The results showed that mean time spent in hard PA among girls was 99.66 ± 138.32 minutes and among boys was 213.18 ± 182.41 minutes (p-value 0.008). Mean time spent in moderate PA among girls was 110.69 ± 77.16 minutes and among boys was 188.33 ± 119.70 minutes (p-value 0.004). Mean time for T.V/homework etc. among girls was 752.76 ± 424.53 minutes and among boys was 925.15 ± 451.04 minutes (p-value 0.128). There was inverse and weak relationship between age and C-PAQ score ($r=0.097$). There was positive and weak relationship between pedometer steps and

time spent in PA ($r=0.237$).

Conclusions:

There is lack of awareness towards PA among pediatric population in Pakistan. Mostly children overestimate their level of PA. They failed to achieve the required level of PA. Boys are found to be more active than girls. They spent more time in sports, videogames, computer etc. as compared to girls while girls spent more time in leisure activities and homework. PA level tends to decrease by increasing age and there is irregular and miscellaneous attitude towards PA.

Keywords:

Awareness, Attitude, Physical activity, Pediatric population.

Introduction:

Sedentary Behaviors (SB) are defined as a distinct class of behaviors characterized by little physical movement and low energy expenditure (≤ 1.5 METs).¹ Sedentary lifestyles such as sitting at work, school or while regular travelling via car or bus, watching television, reading, using a computer, and playing video games² are progressively causing risk of NCDs including Cardio Vascular Diseases (CVDs), Reduced Bone Mineral Density (BMD), obesity, diabetes mellitus, cancers, osteoporosis, chronic respiratory diseases, and psychological disorders^{3,5} that constitute a major challenge towards public health and clinical medicine all over the world.⁶

Pakistan, 6th most populous country on the globe, carries 40 million population suffering from high blood pressure, cardiac disease; 32 million, obesity; 24 million, high cholesterol; 18 million, diabetes; 8 million and mental health disorders; 50 million.⁷

Physical Activity (PA) is defined as any bodily movement produced by skeletal muscles that require energy expenditure.⁸ PA aids to build muscle mass during development and conserve musculoskeletal function during aging, stimulates cardio-metabolic wellness, improves

cognitive skills, and proficiently supports in the prevention and treatment of a variant health conditions, including cardiovascular disease, diabetes and other metabolic disorders, osteoporosis, cancer and abatement in the symptoms of mental illness, and refinements in self-confidence and self-esteem.^{9,10} According to WHO, in Pakistan the country with inequalities regarding to quintiles of socioeconomic status¹¹, required level of public education and awareness campaigns on PA is not achieved yet.¹² Physically active lifestyle starts developing very early in childhood and the habits of moderate or high level PAs continue along the life course from youth to adulthood. For childhood based positive health benefits, minimum 60 min of MVPA per day is recommended.¹³ Modern lifestyles are affected by social, cultural and technological changes.¹⁴ Family environment and factors such as access to media (TV/internet), household rules, siblings influences and habits, were noted to be significant in impacts on children's sedentary and active behaviors.¹⁵ School settings are trending towards devoting more teaching time to academics, which reduces time spent in physical education and sport in schools.¹⁶

It is notable that traditional organized games do not meet required MVPA levels and have more sedentary lifestyle, in comparison to free play. However, both modified using LET US Play principles (optimizing MVPA by modifying games), increases the amount of MVPA time and SB among boys and girls is remarkably reduced.¹⁷ Probably, parks and green areas occurs to play vital role that serves options for a wide range PA behaviors, like recreational walking and playing sports.¹⁸ Latest researches also support the active video games (AVGs)/virtual reality (VR) games being helpful to engage the children in sufficient PA intensity and reduce SB for positive health benefits.¹⁹

Methodology:

The cross sectional study was conducted in two different schools of Lahore, Pakistan in 2018 among pediatric population (age 5 to 12). Convenient sampling was used to get data of 62 children (boys=33 and girls=29) via subjective measures (self-reported) and objective measures (pedometer). Children Physical Activity Questionnaire (C-PAQ) was used to determin

e the attitude towards PA and Modified SHAPES Questionnaire for Children to access the awareness about PA were used for subjective measures. Validity and reliability of C-PAQ and Modified SHAPES Questionnaire for children were evidenced^{20,21}.

C-PAQ was presented to the parents on sunday and asked to recall their child's activities for the past seven days. Modified SHAPES Questionnaire was distributed among children on Thursday to estimate the time spent in hard PAs, moderate PAs and watching T.V/playing video games/doing homework etc. for four days (Thursday-Sunday). Phisiopadic LCD pedometers were attached to the children for objective measures. With proper instruction, children were guided to wear it four days all the time except sleeping, bathing or any water activity to avoid any damage. Pedometers were set to zero count, sealed in waist band pouch and aligned to right side to get accurate measurement. C-PAQ was scored according to level of PA. High energy level PAs were scored as 5, moderate level PAs were scored as 3 and low level PAs were scored as 1 while 0 for not activity. C-PAQ results were calculated in percentage.

Results:

Average time for hard PAs among Girls was 99.66 ± 138.32 minutes and among boys was 213.18 ± 182.41 minutes (p-value 0.008). Average time for moderate PAs among Girls was 110.69 ± 77.16 minutes and among Boys was 188.33 ± 119.70 minutes (p-value 0.004). Average time for T.V/Games etc. among Girls was 752.76 ± 424.53 minutes and among Boys was 925.15 ± 451.04 minutes (p-value 0.128). Boys and girls obtained mean score in C-PAQ was $40.48 \pm 12.45\%$ and $34.24 \pm 8.41\%$ respectively (p=0.026). Mean pedometer steps count for boys was 8874.52 ± 1333.47 and 8305.48 ± 1149.44 for girls.

	Gender	N	Mean	Std. Deviation	T	p-value
BMI	Girl	29	19.34	3.76	-0.866	0.390
	Boy	33	20.43	5.78		
Total time for hard Physical Activity	Girl	29	99.66	138.32	-2.731	0.008*
	Boy	33	213.18	182.41		
Total time for moderate Physical Activity	Girl	29	110.69	77.16	-2.988	0.004*
	Boy	33	188.33	119.70		
Total Time For T.V/Games etc.	Girl	29	752.76	424.53	-1.543	0.128
	Boy	33	925.15	451.04		
C-PAQ score in percentage	Girl	29	34.24	8.41	-2.281	0.026*
	Boy	33	40.48	12.45		
Pedometer steps per day	Girl	29	8305.48	1149.44	-1.787	0.079
	Boy	33	8874.52	1333.47		

Table 1: Attitude towards Physical activity

There was inverse and week relationship between age and C-PAQ score ($r=0.097$) while positive and strong correlation between pedometer steps and C-PAQ score ($r=0.883$) as shown in fig. There is positive and week

relationship between pedometer steps and time spent in PA self-reported ($r=0.237$). These results elaborates that there was decrease in PA as the children are growing up and overall there is lack of awareness about the PA among the children.

Correlations	C-PAQ score in percentage	Pedometer steps	Total time
Age	-0.097	-0.139	0.135
C-PAQ score in percentage		0.883**	0.294
Pedometer steps			0.237

Table 2: Relations among Age, Time, C-PAQ score, Pedometer steps

Discussion:

The current study showed that boys spend more time in outdoor PA than the girls. Boys spend more time in computer/video games/phone etc. Ulf Ekelund *et al.*, concluded in his study that boys were more active than girls and spent about 55% more of average daytime in MVPA. Girls used to spend more sedentary time than boys.²² The difference of SB is actually influenced by culture, climate and socio-economic status. The results of this study disclose that BMI do not affect the PA levels of children but gender and age shows interdependence with PA levels. Cliff DP *et al.*, revealed that PA varied by difference in countries. After age of 5 years, an average decrease of 4.2 % was observed in total PA. Weight status did not change PA in the youngest

children.²³ This study exhibits that there is lack of awareness regarding PA among children and there is a difference in objectively measured PA and self-reported PA. TS Kaur *et al.*, aimed to analyze awareness of PA and SB among parents and children and she concluded that children were less likely to aware of their PA and SB. They overestimate PA and underestimate the SB.²¹ According to this study, Pakistani pediatric population's average pedometer steps count is 8874.52 ± 1333.47 for boys and 8305.48 ± 1149.44 for girls. These figures decrease by increasing age. Cameron C *et al.*, conducted a survey in 2016 among Canadian children of age 5 to 19 years old ($n=43,806$). The objective of the study was to explain PA behaviors for 5 to 19 year olds. The outcomes suggested that children achieve <7000

steps/day that decreased by time.²⁴

A fluctuating attitude was concluded by this study. A study was conducted by Andrew J. Atkin et al., in 2016 to understand seasonal variation in PA. The results showed that Children PA behavior fluctuates according to the seasonal changes with variability in week days and weekends.²⁵

Conclusions:

Based on the findings of this cross sectional study it was concluded that there was lack of awareness towards PA among pediatric population in Pakistan. Mostly children overestimated their level of PA and SB. They failed to secure the required level of PA for healthy outcomes in their daily life. Boys found to be more active than girls, they spent more time in sports, videogames, computer etc. while girls spent more time in leisure activities and homework. The PA levels tend to decrease by increasing age. Children also carried irregular and miscellaneous attitude towards PA.

Recommendations:

A future study should conduct by using large sample size from different areas of the state (both urban and rural) can be done. Awareness programs should be conducted relevant to physical activity. There should be interventions to indulge children in more active life.

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