

The Role of Socioeconomic Status and Parental Support on Participation of Children with ADHD in Sport and Exercise

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Abstract

Background and aim: This study aims to examine the impact of socioeconomic status and parental support on the involvement of children with ADHD in sports and exercise.

Methods: The current research is conducted using a descriptive-correlation methodology, in alignment with its objectives. The statistical population for this study comprises 153 children diagnosed with ADHD, who were chosen through convenience sampling. Standard questionnaires were used for measuring research variables. Pearson's correlation test was applied for the inferential analysis of the relationships among the research variables.

Results: There was a direct and significant relationship between education with physical activity (days per week) ($r=0.429$, $p<0.001$), physical activity (minutes per week) ($r=0.362$, $p<0.001$) and intensity of physical activity ($r=0.567$, $p<0.001$). Also, there was a direct and significant relationship between income with physical activity (days per week) ($r=0.630$, $p<0.001$), physical activity (minutes per week) ($r=0.417$, $p<0.001$) and intensity of physical activity ($r=0.360$, $p<0.001$). Finally, there was a direct and significant relationship between parental support with physical activity (days per week) ($r=0.418$, $p<0.001$), physical activity (minutes per week) ($r=0.528$, $p<0.001$) and intensity of physical activity ($r=0.397$, $p<0.001$).

Conclusion: Parents' socioeconomic status and engagement in physical activities positively influences their children's own physical activity levels.

Keywords: Physical Activity, Socioeconomic Status, Parental Support, Children, ADHD

INTRODUCTION

It is indisputable that sports have evolved into a global phenomenon in contemporary society. In the early 20th century, sports were primarily viewed as a form of art and a means to foster a healthy community. The growing awareness and participation in sports, driven by recognition of its numerous benefits—including positive physical, mental, social, and economic impacts—have prompted governments to consider strategic planning and investment in sports and recreational health initiatives (Baniyadi et al, 2022; Ganjeh et al., 2021). Engaging in physical activity enhances the quality of life for individuals across all age groups. Furthermore, regular physical activity plays a crucial role in mitigating the risks associated with various chronic illnesses, including cardiovascular diseases, hypertension, obesity, diabetes, osteoporosis, cancer, as well as mental health issues such as depression and anxiety (Gallego-Méndez et al., 2020). Adopting an active lifestyle is essential for sustaining health. The American Heart Association advises individuals to engage in 30 to 60 minutes of physical activity three to four times weekly to promote cardiovascular well-being. Additionally, the World Health

Organization identifies physical inactivity as one of the top ten contributors to mortality and disability (Gitimoghaddam et al., 2021; Karaslan et al., 2021).

The decline in physical activity is significantly contributing to the rising rates of obesity among children and adolescents, representing one of the most detrimental consequences of inactivity. Physical inactivity, characterized by a lack of regular exercise, ranks as the fourth leading risk factor for global mortality, accounting for 6% of deaths worldwide, which translates to approximately 2.3 million fatalities annually (Ganjeh et al., 2022). The prevalence of physical inactivity is on the rise in numerous countries, particularly in high-income nations, posing serious threats to public health globally. These threats include an increased incidence of cardiovascular diseases, diabetes, and cancer, among others. Variations in the physical health of populations across different countries can be attributed to multiple factors (Lingineni et al., 2012). Recent research from Australia, Canada, England, and the United States indicates that nearly 10% of the adult population engages in sufficient aerobic activity. This level of activity is defined as participating in vigorous exercises for at least 20 to 30 minutes, three times a week during peak hours. It is evident that a sedentary lifestyle is becoming the norm, with the proportion of individuals classified as sedentary—those who are less active than average—ranging from 25% to 33% higher than in the populations studied (Tamir et al., 2024).

England and Finland appear to have a relatively low proportion of inactive individuals. In Finland, for instance, 15% of those aged 30 to 59 consider themselves to be very active. Conversely, the level of physical activity among adolescents is alarmingly low. Research indicates that, despite awareness of the dangers associated with physical inactivity, three national surveys reveal that 80% of youth are either physically inactive or at risk of becoming so (Sayer, 2017; Tran et al., 2023). Numerous studies conducted in highlight a decline in participation in physical activities and sports, leading to a reduction in overall physical activity levels. Findings suggest that the lowest rates of physical activity among adults are observed in Thailand, Saudi Arabia, Brazil, and Iran. It is evident that young people and teenagers in the contemporary world are not engaging in sufficient physical activity to fulfill their health requirements. Therefore, it is essential to understand the environmental context and the factors influencing the physical engagement of these individuals (Ghorbani et al., 2020).

The inclination of individuals to engage in physical activities and sports is influenced by several critical factors, including social support, economic status, socio-economic conditions, cultural background, and personal psycho-social elements. Research indicates that the patterns of physical participation vary among individuals from diverse cultural and socio-economic backgrounds (Ludyga et al., 2023; Yurtseven et al., 2024; Ilkm et al., 2021). Participation rates in physical activities are contingent upon the cultural and social contexts of a given society. Some studies have highlighted the impact of gender stereotypes on lifestyle choices, revealing that Indian women and other ethnic minorities often face barriers to participating in sports compared to their Australian counterparts, primarily due to cultural constraints. Furthermore, socio-economic status has a significant and positive correlation with sports participation and membership in sports clubs for both genders. The variables associated with socio-economic status play a crucial role in influencing physical participation, although they appear to have no discernible effect on the activities of children (Naeimikia et al., 2022).

Individuals hailing from families with elevated socio-economic status, characterized by occupation and education levels, tend to engage more frequently in moderate-intensity organized sports activities. In contrast, those from lower socio-economic backgrounds are more likely to partake in unstructured and low-intensity physical activities. The physical fitness of students is positively correlated with their socio-economic standing; those from higher social strata generally exhibit better fitness levels (Abdoshahi & Ghorbani, 2022; Baniasadi et al., 2022). Furthermore, students belonging to families with average or above-average socio-economic status are more inclined to engage in physical activities, benefiting from both emotional and financial support. Conversely, students from families with lower socio-economic status often lack regular participation in physical activities, primarily due to a lack of awareness regarding the advantages of such activities and insufficient emotional and financial backing. Additionally, researchers have indicated that the family environment and socio-economic foundation significantly influence students' psychological attitudes towards various sports and their physical capabilities (Männikkö et al., 2020).

The dissemination of scientific research, the enhancement of health and public culture within society, and the growing awareness among individuals regarding the impact of sports on health have led to an increased public interest in physical activities and sports. Consequently, to foster the growth and expansion of sports, it is essential to thoroughly understand and identify the factors that influence individuals' inclination to engage in sports activities (Hickingbotham et al., 2021). Research findings indicate that the patterns and habits of physical activity established during childhood and adolescence are likely to persist into adulthood. Thus, whether a child is active or inactive can serve as a predictor of their adult lifestyle. It is therefore crucial to recognize the socio-economic factors that influence children's levels of physical activity to cultivate appropriate habits that can alter behavioral patterns (Montalva-Valenzuela et al., 2022). In general, numerous factors, both direct (such as facilities and resources) and indirect (including psychological and perceptual factors, attitudes, and personal psychological benefits), significantly influence individuals' participation in physical activities. Understanding these factors is vital for effective policymaking aimed at promoting health development (Lakes et al., 2020).

In previous research, data regarding lifestyle choices and health levels have been gathered through questionnaires tailored to individuals' recollections of their physical activity over the preceding week. The findings underscore the critical role of engaging in physical activities and sports for the enhancement of both individual and societal physical and mental well-being, highlighting the need for increased participation in these areas (Tandon et al., 2019). To facilitate this, it is essential to investigate the various factors influencing participation, such as the economic and social status of families, their attitudes towards physical activity, and psychological and individual factors. It appears that certain family attitudes may hinder boys and girls from participating in sports (Shimoni et al., 2010). Consequently, this study aims to examine the impact of socioeconomic status and parental support on the involvement of children with ADHD in sports and exercise.

METHODS

The current research is conducted using a descriptive-correlation methodology, in alignment with its objectives. The statistical population for this study comprises 153 children diagnosed with ADHD, who were chosen through convenience sampling.

Parental socioeconomic status, encompassing the educational attainment of parents and household income, was assessed utilizing the scale created by (34). The educational levels of parents were classified into three categories: low (score 1), medium (score 2), and high (score 3). Similarly, annual household income was segmented into low (score 1), medium (score 2), and high (score 3) categories. In this study, the Cronbach's α coefficient for this scale was determined to be 0.89.

A survey assessing parental support for physical activity was developed by Vancampfort, Firth, Schuch, Rosenbaum, Probst, Ward, ... & Stubbs (2016). This survey comprises four statements, with participants responding using a 5-point Likert scale, where 5 indicates "every day" and 1 signifies "never." The scoring system is based on the average of the responses, resulting in a score range from 1 to 5. A higher average score, closer to 5, reflects greater parental support. The average level of physical activity indicated by this survey is 3.

Physical activity was assessed utilizing the short form of the International Physical Activity Questionnaire (IPAQ) (Baniyadi et al., 2022). This instrument comprises seven questions, enabling the collection of data regarding individuals' physical activity over the preceding week. As per the guidelines of the questionnaire, the overall intensity of physical activities undertaken by an individual is categorized into three groups: light, moderate, and vigorous, based on the energy expenditure recorded during the last seven days. Activities lasting less than 11 minutes are excluded from the calculations. In this assessment, walking is assigned a metabolic equivalent of task (MET) value of 3.3, moderate physical activity is valued at 4, and vigorous physical activity is rated at 8. A MET quantifies the energy expended per minute by an individual while engaged in physical tasks. To determine the total weekly physical activity, the calculations involve summing the products of walking (MET \times minutes \times days), moderate physical activity (MET \times minutes \times days), and vigorous physical activity (MET \times minutes \times days) reported over the past week. This questionnaire is designed for evaluating the physical activity levels of adults aged 18 to 65 and has been widely employed in various studies, demonstrating strong validity and reliability.

In this study, descriptive statistics such as the mean and standard deviation were employed to characterize the research variables. The Kolmogorov-Smirnov test was utilized to assess the normality of the data collected. Furthermore, Pearson's correlation test was applied for the inferential analysis of the relationships among the research variables, with a significance level set at 0.05.

RESULTS

Table 1 shows the individual characteristics of the research subjects, including age, height, weight, and body mass index. As it is known, the average age of the subjects is 9.52 years. Also, the research subjects have a body mass index with an average of 17.08 at an average level.

Table 1. Demographic Data of the Subjects

Variable	Age (year)	Height (cm)	Weight (kg)	BMI
Mean \pm SD	9.52 \pm 1.41	130.94 \pm 7.92	30.28 \pm 8.94	18.08 \pm 1.23

Also, the mean and standard deviation of the subjects' scores in all research variables are given in Table 2. Regarding the physical activity status of children with ADHD, it can be stated that the research subjects had a level of physical activity lower than the value recommended by the World Health Organization. Regarding the physical activity pattern of the subjects, the results showed that a total of 36% of the subjects had moderate-to-vigorous physical activity; which indicates that about half of the children with ADHD do not have proper physical activity for physical and mental health. Also, parental socioeconomic status scores were in the average range. Finally, the subjects' parental support scores were also average.

Table 2. Description of Research Variables

Variable	physical activity (day of the week)	physical activity (minutes per week)	physical activity (intensity)			Socioeconomic status		Parental support
			light (percent)	moderate (percent)	vigorous (percent)	Education	Income	
Mean ± SD	3.26 ± 0.56	155.10 ± 24.27	64%	26%	10%	1.93±0.28	1.36±0.74	2.34±0.68

Table 3 shows the results of the Kolmogorov-Smirnov test to determine the normal distribution of the data. The results of the Kolmogorov-Smirnov test also showed that all research variables have a normal distribution ($P>0.05$).

Table 3. The Results of Normal Distribution

Variable	physical activity (day of the week)	physical activity (minutes per week)	physical activity (intensity)			Socioeconomic status		Parental support
			light (percent)	moderate (percent)	vigorous (percent)	Education	Income	
K-S	0.968	1.024	0.857	1.047	1.035	1.221	0.879	0.984
P	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200

Table 4 shows the results of the Pearson correlation test. The research results showed that 1) there was a direct and significant relationship between education with physical activity (days per week) ($r=0.429$, $p<0.001$), physical activity (minutes per week) ($r=0.362$, $p<0.001$) and intensity of physical activity ($r=0.567$, $p<0.001$), 2) there was a direct and significant relationship between income with physical activity (days per week) ($r=0.630$, $p<0.001$), physical activity (minutes per week) ($r=0.417$, $p<0.001$) and intensity of physical activity ($r=0.360$, $p<0.001$), 3) there was a direct and significant relationship between parental support with physical activity (days per week) ($r=0.418$, $p<0.001$), physical activity (minutes per week) ($r=0.528$, $p<0.001$) and intensity of physical activity ($r=0.397$, $p<0.001$).

Table 4. The results of the relationship between socioeconomic status and parental support with physical activity

Variable	physical activity (day of the week)	physical activity (minutes per week)	physical (intensity)	activity
Education	$r=0.429$ $p<0.001$	$r=0.362$ $p<0.001$	$r=0.567$ $p<0.001$	
Income	$r=0.630$ $p<0.001$	$r=0.417$ $p<0.001$	$r=0.360$ $p<0.001$	
Parental support	$r=0.418$ $p<0.001$	$r=0.528$ $p<0.001$	$r=0.397$ $p<0.001$	

DISCUSSION

This study aims to examine the impact of socioeconomic status and parental support on the involvement of children with ADHD in sports and exercise. The results of the study showed that socioeconomic status (education and income) and parental support affect participation of children with ADHD in sport and physical activity.

Initially, it was observed that the children involved in this study engaged in significantly fewer physical activities than the levels recommended by the World Health Organization, specifically 60 minutes of moderate to vigorous physical activity (MVPA), which suggests that children with ADHD exhibit a low weekly level of physical activity. These findings are consistent with prior research (Gapin, 2009; Omidvar et al., 2018) that has reported similarly low physical activity levels among children diagnosed with ADHD. Considering the myriad benefits associated with regular physical activity, it is essential to investigate and implement effective strategies and interventions aimed at enhancing participation in physical activity and exercise for children with ADHD. Furthermore, developing methods to foster and enhance motivation in these children to engage consistently in physical activities is particularly crucial.

Social learning theory illustrates that individuals can acquire behaviors by observing others. Furthermore, the concepts of social cognition and programmed behavior recognize that the actions of others serve as descriptive norms, which can influence individuals to engage in behaviors aligned with perceived behavioral

standards. This creates motivation. Consequently, it can be posited that children whose parents exhibit physically active behaviors at home are likely to emulate these actions, thereby shaping their own physical activity habits (Baniasadi et al., 2022). This assertion holds particularly true for teenagers and children, as they require more time and attention. Parents typically serve as the primary agents of social acceptance in the lives of their children. Social support can be enhanced through both direct and indirect approaches. Direct social support involves engaging in physical activities together or completing household tasks that provide opportunities for physical engagement, allowing other family members to participate in sports (Ross et al., 2020). Tangible support is one of the most effective means of promoting physical activity, as it is influenced by parental behaviors that facilitate participation. This form of support may encompass parents actively participating in activities with their children, such as playing together and dedicating family time to physical pursuits (Chaharbaghi et al., 2022).

In the early years of a child's life, parents serve as crucial role models for their behavior, with children often attempting to emulate their actions. The influence of parents is profound and significant; their speech serves as a reference point, while their conduct acts as a template for children. Consequently, a child's behavior is frequently seen as a reflection of their parents' actions (Pan et al., 2016). Active parents, or those who advocate for a physically engaging lifestyle—adhering to physical activity guidelines, prioritizing fitness, and participating in sports or other physical endeavors—can significantly impact their children's acceptance, initiation, and persistence in physical activities and sports. It is evident that a positive parental attitude towards physical activity correlates with increased participation from children. Additionally, the involvement of other family members, such as siblings, plays a vital role, as they can also serve as influential behavioral models for young children (Tine & Butler, 2012).

It can be concluded that for parents aiming to foster an active lifestyle in their children, it is essential that they exemplify the behaviors and practices they wish to instill (Khosravi et al., 2023; Seyedi Asl et al., 2016; 2020; Taghva et al., 2020). A disconnect between a parent's words and actions can hinder their effectiveness in influencing their children. Conversely, support from family members plays a crucial role in a child's willingness to engage in and maintain physical activity (Cook et al., 2015; Marquis & Baker, 2015; Patrinos, 2023). By articulating the significance of physical activity, encouraging active participation, showcasing accomplished athletes, and minimizing sedentary behaviors such as excessive computer use, parents and relatives can shape children's perceptions and attitudes. Additionally, the presence of both intrinsic and extrinsic rewards associated with physical activity can significantly impact children's acceptance, initiation, and persistence in engaging in such activities (Van Egmond-Fröhlich et al., 2012).

In the process of raising a child, both reprimand and encouragement serve as valuable educational tools, and it is essential to apply them in suitable measures as needed. When children engage in physical activities, parents should actively reinforce this behavior by offering appropriate and timely incentives to ensure its continuation (Neudecker et al., 2019; Yazdani et al., 2013). It is crucial to remember that incentives do not have to be material; a parent's gaze and smile can serve as powerful affirmations of a child's actions, motivating them to repeat such behaviors. This affirmation fosters a sense of self-worth and confidence in children, which in turn lays the groundwork for more positive and advantageous physical activity behaviors (Wright et al., 2019; Zhang et al., 2023; Najafzadeh et al., 2024 a,b; Shafaei et al. 2024 a,b).

CONCLUSION

Parents' socioeconomic status and engagement in physical activities positively influences their children's own physical activity levels. Consequently, it is recommended that family-oriented physical activity initiatives be emphasized within family programs. It is important to note that this study focused solely on students in Tehran, and any extrapolation of the findings to other cities should be approached with care.

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