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Research Paper: Designing a Model of Social Factors Affecting Children's Participation in Physical Activity

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Abstract

Although some factors affecting children's participation in physical activity and sports are well known, the important social factors that influence children's participation in physical activity and sports have not been properly identified. In this study, we aimed to design a model of social factors influencing children's participation in physical activity and sports. The method used in the present research is descriptive-correlation based on the structural equation method. The statistical sample of the study consisted of 384 students who were selected through convenience sampling method. Social factors such as parental socioeconomic status, social support, social competence, and social acceptance were measured using standard questionnaires. Structural equation modelling was used to analyze data. The results of the path analysis showed that parental socioeconomic status, social support, social competence and social acceptance had significant effects on motivation (all T>1.96). Moreover, motivation had significant effect on intention to physical activity (T=3.628). Finally, intention to physical activity had significant effect on physical activity (T=5.189). These results show that social factors can be considered in the process of children's participation in physical activity and sports. In this regard, the role of parents, physical education teachers and friends is very important.

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1. Introduction

A sedentary life has been proposed as one of the main risk factors for heart diseases, and it is estimated that the risk of developing these diseases is twice as high in sedentary people (Malm et al., 2019; Chaharbaghi et al., 2022b). Physical activity, which in simple terms refers to any type of body movement with the help of muscles and bones using the expenditure of energy, acts as an important health-promoting behavior and can prevent or delay various chronic diseases and premature mortality (Caspersen et al., 1985). There are numerous evidences that physical activity and regular exercise lead+ to improvement of mental health, reduction of symptoms of depression and anxiety, satisfaction with life and improvement of quality of life (Lahart et al., 2019; Schwartz et al., 2019). Doing regular exercise (30 minutes a day and two or three times a week) is a proven way to reduce total cholesterol, increase high-density lipoprotein, improve the general health of the body (LDL), and reduce low-density lipoprotein (HDL) (Baniasadi et al., 2022a; Baniasadi et al., 2022b; Abdoshahi et al, 2022; Gholami & Rostami, 2021; Ghorbani et al., 2020; Naeimikia & Gholami, 2018). In children, this amount is recommended to be 60 minutes of moderate to vigorous physical activity daily at least 5 days a week (Bull et al., 2020). However, modern lifestyle has led to people's desire to choose a sedentary lifestyle, and this trend is also evident in children and adolescents (Caspersen et al., 1985; Baniasadi et al., 2022a).

It is widely acknowledged that today the level of physical activity of children and adolescents is lower than the recommended level (Sallis et al., 2016). Research evidence shows that the decrease in physical activities with increasing age is the most severe between the ages of 13 and 18 (Baniasadi et al., 2022a; Baniasadi et al., 2022c; Chaharbaghi et al., 2022a). Based on the available evidence, the level of physical activity among children is severely insufficient, which can endanger their current and future health. Studies have shown that currently only 20-25% of girls and 35-40% of boys follow the World Health Organization guidelines of at least 60 minutes of moderate-to-vigorous physical activity per day (Štefan et al., 2018; Sheikh et al., 2021; Sheikh et al., 2022; Dana et al., 2022). For example, in Mexico, children aged 9-11 years watch more than two hours of television per day, which is much higher than recommended by the World Health Organization (Hashemi Motlagh et al., 2022). Bos et al. (2006 as cited in Hazrati et al., 2022) examined the physical activity and health status of 9-, 14-, and 18-year-old children in Luxembourg and found that only 18% of girls and 35% of boys were physically active for at least 60 minutes per day. Baddou et al. (2018 as cited in Mohammadi et al., 2022) showed that boys meet the international guidelines of doing at least 60 minutes of moderate-to-vigorous physical activity per day more than girls. Therefore, the World Health Organization has set a goal to increase physical activity by 15% by 2030 in boys and girls. There is an urgent need for substantial action aimed at reducing the level of insufficient activity and a special focus on girls (Bull et al., 2020).

Various studies on physical activity behavior of children and adolescents have shown that physical activity significantly decreases with age, and this causes an increase in the prevalence of obesity and overweight in children (Saeedpour-Parizi et al., 2020; 2021). Considering these facts, the physical activity of children and adolescents has become a key topic in research related to pediatrics, sports and health during the last decade. Considering the benefits of physical activity and sports for children, one of the basic issues that must be investigated in this field is the processes that determine children's participation in physical and sports activities. Motivation can be one of the important variables in predicting the children's participation in physical activity and sports (Cid et al., 2019).

Although some factors affecting motivation to participate in physical activity and sports are known, the important social factors that motivate children to participate in physical activity and sports have not been properly identified. In this study, we aimed to design a model of social factors influencing children's participation in physical activity and sports. Some social factors such as social support, socio-economic status, social competence, and social acceptance have been included in the model.

2. Methods

2.1. Participants

The method used in the present research is descriptive-correlation based on the structural equation method. The current study was conducted based on the ethical considerations contained in the Declaration of Helsinki. The statistical population of this research includes all male children of Tehran who were studying in one of the primary schools in 2022. The statistical sample of the study consisted of 384 students who were selected through convenience sampling method.

2.2. Measures

2.2.1. Parental socioeconomic status: Parental socioeconomic status was measured òy two items, namely, parents' education level and household income (Farhangnia et al., 2020). Using self-reported data, we created three categories for parent education including low (score 1), medium (score 2), and high (score 3). Similarly, we created three categories for parent income including low (score 1), medium (score 2), and high (score 3). The average score of education and income built total score. Accordingly, a score between 0 to 1, 1 to 2, and 2 to 3 represses low, medium, and high parental socioeconomic status, respectively. In this study, Cronbach's α of this questionnaire was 0.92.

2.2.2. Social support: Social support was measured using a questionnaire (Golaszewski & Bartholomew, 2019) with seven items scored on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Cronbach's alpha of this questionnaire was reported to be 0.85 in this study.

2.2.3. Social competence: In this study, we measured social competence using Perceived Social Competence Scale (PSCS) (Abdi et al., 2022) with six items scored on a 5-point Likert-type scale (not at all [1], a little [2],

some [3], a lot [4] and very much [5]). Thus, the range of possible scores for the PSCS is 6 to ... Cronbach's alpha of this questionnaire was reported to be 0.93 in this study.

2.2.4. Social acceptance: We used the subscale "social acceptance" from the Self Perception Profile for Children (Harter, 2012), with six items scored on a 4-point Likert-type scale, where a score of 1 indicates a low competence perception and 4 indicates a high competence perception. The items of this scale have two opposite options; For example: "Some kids find it hard to make friends. BUT Other kids find it pretty easy to make friends". Each option has two answers:1- It is true about me; 2- It is not true about meb Cronbach's alpha of this questionnaire was reported to be 0.87 in this study.

2.2.5. Motivation: Motivation for physical activity in leisure-time was measured by using four questions that were designed on the basis of Intrinsic Motivation Scale (Seyedi Asl et al., 2016). Each question was scored on a Likert scale from completely disagree (1) to completely agree (7). Cronbach's alpha of this questionnaire was reported to be 0.90 in this study.

2.2.6. Intention to physical activity: The intention of children to participate in physical activity during the leisure time was measured using two questions (Abdoshahi et al., 2022) which were assessed using a Likert scale from completely disagree (1) to completely agree (7). Cronbach's alpha of this questionnaire was reported to be 0.82 in this study.

2.2.7. Physical activity engagement: We measured leisure-time physical activity using the Physical Activity Behavior in Leisure-Time Scale (Sheikh et al., 2021) including three questions scored based on an eight-point Likert scale from zero days (0) to seven days (7). Cronbach's alpha of this questionnaire was reported to be 0.92 in this study.

2.3. Data analysis

Descriptive analysis including means and standard deviations was used to describe the research variables. Pearson correlation test was utilized to measure bidirectional associations between research variables. Finally, structural equation method by using Lisrel was used to investigate the structural relationships between research variables. Significant levels were considered at the alpha level of 0.05.

3. Results

3.1. Descriptive data

The demographic characteristics of the participants including age, height, weight, and body mass index are shown in Table 1. The age range of the participants was between 7 and 12 years and their average age was 10.21 years. Also, the demographic findings showed that the average body mass index of children was 17.21, which indicates that the height and weight of children are within the normal range.

Table 1

Average and standard deviation of the demographic components of the research subjects

Variable	Age (years)	Height (cm)	Weight (kg)	Body mass index
Mean ± SD	10.21 ± 1.69	139.22 ± 10.16	32.22 ± 7.82	17.21 ± 1.51

3.2. Associations between measured items

The results of Pearson correlation tests (Table 2) showed significant direct associations between parental socioeconomic status, social support, social competence and social acceptance with motivation, intention, and physical activity (all P<0.001).

Table 2

Results of associations between measured items

	Parental socioeconomic status	Social support	Social competence	Social acceptance
Motivation	r=0.428 P<0.001	r=0.284 P<0.001	r=0.334 P<0.001	r=0.630 P<0.001
Intention to physical activity	r=0.339 P<0.001	r=0.691 P<0.001	r=0.208 P<0.001	r=0.289 P<0.001
Physical activity	r=0.471 P<0.001	r=0.267 P<0.001	r=0.490 P<0.001	r=0.406 P<0.001

3.5. Path analysis

The results of the path analysis are presented in Table 3 and Figure 1. The results showed that parental socioeconomic status, social support, social competence and social acceptance had significant effects on motivation (all T>1.96). Moreover, motivation had significant effect on intention to physical activity (T=3.628). Finally, intention to physical activity had significant effect on physical activity (T=5.189).

Table 3

Results of path analysis

	Path	β	T-value
1	parental socioeconomic status => motivation	0.482	5.127
2	social support => motivation	0.236	2.943
3	social competence => motivation	0.307	3.910
4	social acceptance => motivation	0.634	7.018
5	motivation => intention	0.351	3.628
6	intention => physical activity	0.588	5.189

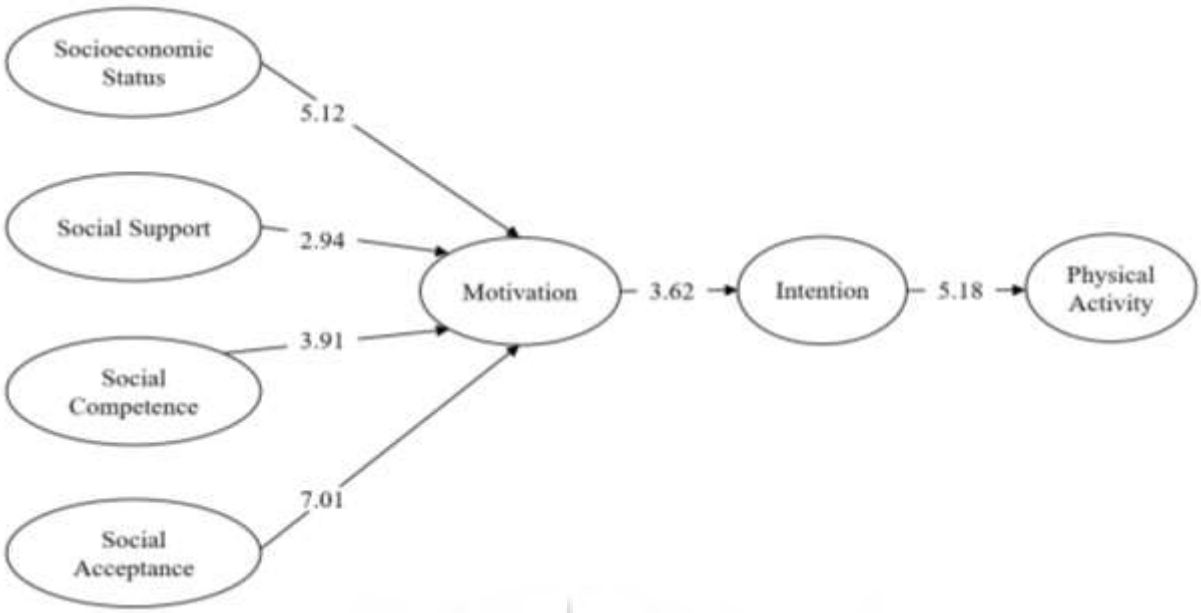

Figure 1. Results of path analysis in the form of T-Values

Results of model fit are presented in Table 4. As shown, we observed very good fit for the research model as RMSEA was 0.07.

Table 4.
Results of model fit

Index	Optimal Range	Obtained Value	Conclusion
RMSEA	< 0.08	0.07	Good fit
X^2 / df	< 3	2.63	Good fit
RMR	Closer to 0	0.02	Good fit
NFI	> 0.9	0.93	Good fit
CFI	> 0.9	0.94	Good fit

4. Discussion

Although some factors affecting children's participation in physical activity and sports are well known, the important social factors that influence children's participation in physical activity and sports have not been properly identified. In this study, we aimed to design a model of social factors influencing children's participation in physical activity and sports. Some social factors such as socio-economic status, social support, social competence, and social acceptance have been included in the model. First of all, data on physical activity showed that the amount of physical activity of children included in this study was very low, indicating that the children do not meet the WHO guideline. These results are in accordance with previous findings (Sallis et al., 2016; Baniasadi et al., 2022a, Baniasadi et al., 2022c; Chaharbaghi et al, 2022a; Štefan et al,, 8888; Sheikh et al., 2021; 2022; Dana et al., 2022), showing that

children and adolescents worldwide do not have enough amounts of physical activity. Considering the health benefits of participation in regular physical activity for children and adolescents (Lahart et al., 2019; Schwartz et al., 2019; Baniasadi et al., 2022a, Baniasadi et al., 2022b; Abdoshahi et al., 2022; Gholami & Rostami, 2021; Ghorbani et al., 2020;), it seems necessary to implement practical interventions and strategies to increase and improve the amount of physical activity in children and adolescents. In this regard, strategies that focus on increasing the motivation of children and adolescents to participate more in physical activity and sports can be of great importance.

Concerning social factors influencing the participation of children in physical activity, the results of this study showed that some factors such as socio-economic status, social support, social competence, and social acceptance had significant and positive effects on motivation, intention, and physical activity among children. Therefore, it can be stated that social components associate with participation of children in physical activity. These findings, also, support ecological systems theory (Santos et al., 2004), which holds that children's sports participation is affected by a series of environmental systems around the person, such as social support, parental socioeconomic status, parental support, peer support, and school sports facilities etc. The results of this study are also consistent with the results of previous studies (Santos et al., 2004; Taghva et al., 2020; George et al., 2019; Sumimoto et al., 2021; Khosravi et al., 2023; Green et al., 2004; Seyedi Asl et al., 2021; Hwang et al., 2017; Ball et al., 2007; Garcia et al., 2019; Yu et al., 2019) showing that social support and social environment influence people's participation in physical activity and sports. Supporting measures in the form of companionship and support, counseling or even feedback about the visible effects of sports on the individual at the level of family, friends and others, undoubtedly play a stimulating role for children's participation in physical activity and sports.

Another important finding of the present study was that motivation was an important and key factor in the research model. In fact, the results showed that social factors have positive effects on children's motivation to participate in physical activity. Also, the motivation created can increase children's intention to participate in physical activity. These findings are in accordance with the findings of previous studies (Cid et al., 2019), highlighting again the positive impact of motivation on participation of children and adolescents in physical activity and sport (Abdoshahi et al., 2022; Baniasadi et al., 2022c). Internal motivation is an important factor in the occurrence of physical activity, because it insists on the occurrence of physical activity in the absence of any external motivation (Farhangnia et al., 2020). For example, parents and teachers who can enhance students' intrinsic motivation, can encourage students to perform more physical activity. It might be possible that the promotion of motivation by using more social support makes students to feel a sense of enjoyment over their actions, and this feeling leads to a sense of competence and

satisfaction, which in turn leads to participation in physical activity.

A strong point in the current study is that some social factors that were less considered in previous researches were investigated in the current study. Examining these factors made a model of social factors affecting children's participation in physical activity and sports to be drawn. Also, the relatively large research sample in the study research facilitates the generalization of the results. However, one of the limitations of the current study was the use of a questionnaire to measure physical activity in children. It has been shown that subjective tools (such as questionnaire) create bias in measuring physical activity (Slootmaker et al., 2009). Therefore, it is suggested to use objective tools (such as accelerometer) to measure physical activity in future studies.

5. Conclusions

The current study aimed at designing a model of social factors affecting children's participation in physical activity and sports. We found that factors such as socio-economic status, social support, social competence, and social acceptance positively affect children's participation in physical activity and sports. Also, in the research model, motivation was recognized as an important factor. Finally, the present realization model had a good fit. These results show that social factors can be considered in the process of children's participation in physical activity and sports. In this regard, the role of parents, physical education teachers and friends is very important.

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Conflict of interest

The Authors declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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