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Relationship between Physical Activity Level and Physical Literacy in Iranian Ethnic Children: A Cross-Cultural Study

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Extended Abstract

Aim

With the expansion of modern technologies, advancements in media literacy, and declining physical activity levels, the world is witnessing a rise in physical illiteracy. Achieving optimal physical literacy can ensure lifelong engagement in sports and physical activities (Whitehead, 2010). Physical literacy offers numerous benefits, including improved healthcare, enhanced physical and mental well-being, increased productivity, skill development, and greater participation in sports (Giblin et al., 2014). These benefits enrich individual experiences and help people achieve their full potential (Whitehead, 2010). A child's living environment can significantly influence their level of physical activity, either encouraging or hindering it (Tahmasebi et al., 2022). Factors such as upbringing and access to activity opportunities are crucial in developing physical literacy. Thus, the present study aimed to examine the relationship between physical activity levels and physical literacy among children from different Iranian ethnic groups in a cross-cultural context.

Methodology

This descriptive-correlational and applied study involved elementary school students in Iran aged 8 to 12 years (2021). A cluster sampling method was employed to select participants. Six provincial centers were randomly chosen: Khorramabad (Lor ethnicity, west), Ahvaz (Arab ethnicity, south), Tehran (Persian, central), Sanandaj (Kurdish, west), Zahedan (Baloch, east), and Tabriz (Turkish, northwest). Each city was divided into three blocks based on residence type (urban, suburban, rural), and 15 children (aged 8–12) were purposefully selected from each block, resulting in 45 participants per city (15 urban, 15 suburban, 15 rural). A total of 270 participants (135 boys and 135 girls) were included in the study.

To assess physical literacy, the Canadian Physical Literacy Assessment-2 (CPLA-2) was used. This tool evaluates daily physical activity, physical competence, motivation and confidence, and knowledge and understanding. The total score is 100 points, distributed as follows: 30 points each for daily physical activity, physical competence, and motivation and confidence, and 10 points for knowledge and understanding (Longmuir et al., 2015). The International Physical Activity Questionnaire **(IPAQ)** was used to assess weekly moderate-to-vigorous physical activity (Kowalski et al., 2004).

Data were analyzed using Pearson's correlation coefficient, multiple regression, and mixed ANOVA tests in SPSS software version 23.

Findings

The Pearson correlation test revealed a positive and significant relationship between physical literacy and physical activity (P = 0.001). Mixed ANOVA results showed that participants in Khorramabad, Sanandaj, and Zahedan scored significantly higher in physical activity and physical literacy compared to those in Tehran, Ahvaz, and Tabriz (P = 0.001).

Regarding the knowledge and understanding component, children from Tehran and Tabriz scored higher than those from other regions. Children in rural areas outperformed their urban and suburban counterparts in both physical activity and physical literacy levels (P = 0.001). Boys performed better than girls in overall physical literacy (P = 0.001), physical activity (P = 0.001), physical competence (P = 0.001), and daily physical activity (P = 0.001). However, no significant gender differences were observed in motivation and confidence (P = 0.142) or knowledge and understanding (P = 0.345).

Table 1: The results of the analysis of variance test to compare the components of physical literacy (daily physical activity, physical competence, motivation and self-confidence, knowledge and understanding) and physical activity of the participants.

Variable	Indicator	Sum of squares	Df	Mean square	F	Sigh	ETA squared
Geographic Regions	Daily physical activity	794.651	5	158.930	19.929	0.001**	0.241
	Physical competence	528.677	5	105.735	21.068	0.001**	0.253
	Motivation and self-confidence	479.930	5	95.986	19.424	0.001**	0.238
	Knowledge and perception	115.121	5	23.024	10.303	0.001**	0.142
	Physical literacy	367.179	5	73.465	22.41	0.001**	0.261
	Physical activity	10.633	5	2.321	10.717	0.001**	0.147
Gender	Daily physical activity	232.067	1	232.067	17.831	0.001**	0.248
	Physical competence	52.267	1	52.267	8.943	0.004**	0.142
	Motivation and self-confidence	3.033	1	3.033	0.502	0.482	0.009
	Knowledge and perception	1.067	1	1.067	0.366	0.548	0.007
	Physical literacy	649.380	1	649.380	11.704	0.001**	0.178
	Physical activity	2.356	1	2.356	13.150	0.001**	0.196

Conclusion

This research aimed to investigate the relationship between physical activity levels and physical literacy among children from various Iranian ethnic groups. Based on the results, it was found that the students did not achieve an optimal level of physical activity or physical literacy. Specifically, the physical literacy levels of 8- to 12-year-old children were qualitatively at a beginner level, while their physical activity levels were, at best, of medium to low quality. These findings align with previous studies by Valadi & Hamidi (2020) and Cerit et al. (2020). According to the concept of physical literacy, these results indicate that the children involved in the study are far from achieving an active and healthy lifestyle. Regarding geographical location, significant differences were observed in the physical activity and physical literacy levels of children from different Iranian ethnic groups. For example, in subcategories such as daily physical activity, physical fitness, motivation, and self-confidence, participants from Khorramabad, Sanandaj, and Zahedan scored significantly higher than those from Tehran, Ahvaz, and Tabriz. These findings are consistent with the study by Tahmasabi et al. (2022), which showed that 7- to 9-year-old children in Khorramabad and Sanandaj performed better in movement skills compared to their counterparts in Tehran and Ahvaz. Possible explanations for these differences include greater activity opportunities and available space for children in cities like Sanandaj, Khorramabad, and Zahedan compared to cities such as Ahvaz, Tehran, and Tabriz. Additionally, the results revealed differences in physical literacy and physical activity levels based on geographic location and gender. Socio-cultural factors, geographic environments, living conditions, and gender appear to have varying effects on children's physical literacy.

Based on these findings, it is recommended that the Ministry of Education adopt decentralized planning for physical education programs, tailoring them to the ecological environments of students.

Keywords: Ethnicity, Geographical Regions, Living Place, Physical Activity, Physical Literacy.

Ethical Considerations

All families and children were informed that participation in the study was voluntary. Participants' data were kept confidential, and results were published anonymously. This study has not been published or submitted elsewhere. Ethical approval was obtained from the Ethics Committee of the Institute of Physical Education and Sports Sciences (Code: IR.SSRI.REC.1400.1227).

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Conflict of Interest

The authors declare no financial sponsorship or conflict of interest related to this research.

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