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Toward Equitable Sport Opportunities: Addressing Sociodemographic Disparities in Youth Sport Engagement

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Abstract

The aim of this study was to evaluate the associations between sociodemographic factors and different factors of sport participation in early adolescent children. The participants were school-aged children from Kosovo (n=1813; 911 girls) aged 13.7±0.9 years who regularly attended the 8th and 9th grades of elementary school. The variables included sociodemographic data (age, gender, urban/rural living environment, parental education, and socioeconomic status) and sport factors (participation in team and individual sports, experience in sports, and competitive achievement). Differences in sport factors between groups based on sociodemographic variables were established via the Mann-Whitney test (MW) and Kruskal-Wallis ANOVA (KW). The results revealed a positive association between gender and all factors of sport participation, with boys being more involved in sports (MW=7.33 and 13.56, p<0.01 for individual and team sport participation, respectively) and for a longer time (MW=18.23, p<0.001) than girls. The urban living environment was significantly associated with all the observed sport factors (MW=5.04, 2.94, 3.82, all p<0.001). Higher socioeconomic status (KW=13.81, 22.69, and 13.01, all p<0.01), higher paternal education (KW=54.11, 17.11, and 44.83, all p<0.001), and higher maternal education were positively associated with the observed sport factors (KW=85, 11, 28.34, and 108.54, all p<0.001; for team sport, individual sport participation, and experience in sport, respectively). Sociodemographic variables are strong determinants of sport participation in children, and intensive efforts are needed to build similar opportunities for involvement in sports for all children in Kosovo.

Keywords: *puberty, involvement in sports, gender, socioeconomic status, education level*

Introduction

It is globally accepted that physical activity and sport are of utmost importance for children and adolescents (Marinho et al., 2022). The first set of reasons is related to physical health benefits. In brief, activities such as running, jumping, and playing sports help build and maintain strong bones and muscles, setting a good foundation for future growth and development. Regular sports and exercise help children burn calories and maintain a healthy weight, improve overall cardiovascular fitness and reduce the risk of heart disease later in life, whereas activities that involve coordination and balance, such as dancing, swimming, and playing sports, help refine motor skills

and improve overall physical coordination (Janssen & Leblanc, 2010; Manojlovic et al., 2023). Furthermore, physical activity in children is related to several social benefits, including opportunities for socialization. Additionally, many sports activities require teamwork and cooperation, teaching children these valuable life skills. Finally, physical activity in childhood has long-term benefits, such as a reduced risk of chronic diseases later in life (i.e., heart disease, type 2 diabetes, and certain types of cancer), whereas encouraging physical activity at a young age helps children develop healthy habits that can last a lifetime (Biddle & Asare, 2011; Yu et al., 2020).

Because of the all previously said, global health authorities



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are concerned with ways to improve physical activity and sport participation in children. Various strategies are employed, aiming to address barriers and create supportive environments that encourage active lifestyles. Depending on the country, region, tradition and resources, different approaches are employed, including the development of national guidelines and recommendations, the implementation of policies that support physical activity, advocacy for funding and investment in sport, school-based interventions (i.e., increasing physical education, providing facilities), and community-based initiatives (developing parks, playgrounds, etc.) (Bassett-Gunter et al., 2017; Hrg et al., 2023). However, it seems that family and individual interventions should be considered the most effective, simply because of their specificity and availability. Similarly, studies have reported the strong influence of various parental and familial factors on the physical activity and sport participation of children (Lloyd et al., 2014; Lopez et al., 2022). While all interventions should be designed and tailored specifically, the knowledge of factors, including sociodemographic indicators associated with physical activity and sports (sociodemographic correlates), is crucial.

In general, sociodemographic correlates of physical activity and sport in children refer to the various social and demographic factors that are associated with a child's level of physical activity and sport participation (Lammle et al., 2012; Sterdt et al., 2014). Understanding these correlates can help us identify groups of children who may be at greater risk of inactivity and design interventions to promote physical activity and sport participation in these populations. To date, studies have explored these problems and reported relatively consistent results. For example, there is a clear association between gender and physical activity, with boys tending to be more physically active than girls are (Sterdt et al., 2014). Sports participation and physical activity levels generally decline with age throughout childhood and adolescence. Children from lower socioeconomic backgrounds are often less involved in sports and less physically active than those from higher socioeconomic backgrounds are, potentially due to limited access to safe spaces for play and organized sports, fewer resources for equipment, or a lack of parental support for physical activity (Stalsberg & Pedersen, 2010). Children of parents with higher levels of education tend to be more involved in sports and more physically active, likely due to greater awareness of the importance of such activities and more resources to support them. Finally, encouragement and support from parents play a vital role in promoting sport participation and physical activity among children (Cadogan et al., 2014; Matijasevic et al., 2023).

Indeed, sport participation plays a crucial role in promoting physical activity among children, often serving as their primary source of exercise. Research has consistently demonstrated a strong positive association between sports participation and overall physical activity levels, with children involved in sports being more likely to meet recommended guidelines (Gilic et al., 2021; Hafsteinsson Ostenberg et al., 2022; Pharr & Lough, 2014). This is not surprising given that organized sports provide structured opportunities for regular physical activity, encouraging children to engage in exercise consistently. However, it is important to recognize that not all children have equal access to sports opportunities and that barriers such as socioeconomic factors and limited resources can hinder participation. Therefore, in addition to physical education

(which is mandatory for healthy children and therefore similar for those involved in the scholastic system), observing sports as the most important source of physical activity during childhood is reasonable.

While participation in sports is known to be the main source of physical activity for children, knowledge of the correlates of sport participation could be directly translated into strategies aimed at increasing physical activity in children (Gilic et al., 2021; Hafsteinsson Ostenberg et al., 2022). Therefore, this study aimed to evaluate the associations between sociodemographic factors and different factors of sport participation in early adolescent children from Kosovo. Initially, we hypothesized that the observed sociodemographic factors would be positively associated with sport participation in the studied children.

Methods

The participants in this study were school-aged children from Kosovo ($n=1813$; 911 girls) aged 13.7 ± 0.9 years. All participants regularly attended the 8th and 9th grades of elementary school in the territory of Kosovo. One week before the study participants were informed of the study aims and procedure, written consent was obtained from their parents. The response rate was greater than 90%. The study fulfilled all ethical guidelines and received the approval of the ethical boards of the University of Split, Faculty of Kinesiology. The survey was strictly anonymous, was administered to groups of at least 12 respondents and contained multiple-choice answers. Each respondent received the questionnaire form and one envelope. After completing the survey, the participants placed the questionnaire form in the envelope, sealed it and then placed it in the closed box.

Variables were collected via previously validated questionnaires (Sekulic et al., 2012) and included sociodemographic data and sport factors. Sports factors consisted of questions asking subjects about their involvement in team and individual sports (two separate questions and answers included never been involved, quit, currently involved) and time of their involvement in sport (never been involved, <1 year, 1--3 years, >3 years). Sociodemographic variables included questions on age (in years), gender (males vs. females), living community (participants were asked about specific places of residence, later grouped into urban vs. rural communities), familial socioeconomic status (below average, average, above average), and paternal and maternal education levels (both answered on a four-point scale: elementary school, high school, college degree, and university degree).

Descriptive statistics included calculations of means and standard deviations (for age) and counts and frequencies (for all remaining variables). To establish the associations between sociodemographic factors and sport factors, we calculated differences between specific groups of participants according to sociodemographic variables. Specifically, for gender and living community (two possible responses), the Mann-Whitney test of differences was performed. For socioeconomic status (three possible responses), paternal education, and maternal education (four possible responses), Kruskal-Wallis ANOVA was employed. Statistica 13.5 (Tibco Inc. Palo Alto, California, USA) was used, and a p-level of 95% was set for all analyses.

Results

The results of the descriptive statistics and differences in sport-related factors according to gender are presented in

Table 1. In general, boys and girls differed in all sport participation factors, with boys being more involved in individual sports (MW=7.33, p<0.001) and in team sports (MW=13.56, p<0.001). Additionally, boys had longer experience in sport

(MW=18.23, p<0.001). In general, only 10% of boys reported no participation in sports at all (never participated), whereas more than one-third of girls were never involved in any kind of sport.

Table 1. Descriptive statistics and differences in sport participation factors between genders (MW–Mann–Whitney test of differences)

	Boys		Girls		MW (p)
	F	%	F	%	
Individual sport participation					7.33 (0.001)
No, never	362	40.22	513	56.31	
Yes, but quit	261	29.00	229	25.14	
Yes, still participating	276	30.67	169	18.55	
Missing	1	0.11	0	0.00	
Team sport participation					13.56 (0.001)
No, never	157	17.44	438	48.08	
Yes, but quit	255	28.33	204	22.39	
Yes, still participating	487	54.11	267	29.31	
Missing	0	0.11	2	0.21	
Experience in sport					18.23 (0.001)
Never participated	93	10.33	332	36.44	
< 1 year	259	28.78	369	40.50	
2-5 years	296	32.89	165	18.11	
> 5 years	252	28.00	45	4.94	
Missing	0	0.00	0	0.00	

When children living in urban communities were compared with those living in rural communities, clear differences in sport participation factors were found for all the variables. Children from urban communities were more involved in individual and team sports (MW=5.04, p<0.001, and MW=2.84,

p<0.01, respectively) and were involved in sports for a longer period (MW=3.82, p<0.001) than were children from rural communities. For a simple comparison, 21% of the urban children were never involved in sports, whereas this was the case for more than 43% of the rural children (Table 2).

Table 2. Descriptive statistics and differences in sport participation factors between groups based on living community (MW–Mann–Whitney test of differences)

	Urban		Rural		MW (p)
	F	%	F	%	
Individual sport participation					5.04 (0.001)
No, never	770	46.39	107	69.93	
Yes, but quit	468	28.19	22	14.38	
Yes, still participating	421	25.36	24	15.69	
Missing	1	0.06	0	0.00	
Team sport participation					2.84 (0.01)
No, never	525	31.63	70	45.75	
Yes, but quit	431	25.96	29	18.95	
Yes, still participating	701	42.23	54	35.29	
Missing	3	1.81	0	0.00	
Experience in sport					3.82 (0.001)
Never participated	358	21.57	67	43.79	
< 1 year	594	35.78	35	22.88	
2-5 years	438	26.39	24	15.69	
> 5 years	270	16.27	27	17.65	
Missing	0	0.00	0	0.00	

Differences in sport participation factors among groups based on socioeconomic status are presented in Table 3. Once again, significant differences were found for all the study variables. Specifically, the lowest level of participation in individual sports was found for children who declared the “below average” socioeconomic status of the family (KW=13.82, p<0.01). A similar trend was observed for team sport participation (MW=22.69, p<0.001) and

experience in sports (MW=13.01, p<0.01). In the group of children who reported “below average” socioeconomic status of the family, 32% never participated in sport, whereas this was the case for 24% of children in the “below average” group and <20% of children who self-declared “above average” financial status.

When participants were grouped on the basis of paternal education and then compared in terms of sport factors, signifi-

Table 3. Descriptive statistics and differences in sport participation factors between groups based on socioeconomic status (KW – Kruskal–Wallis ANOVA test)

	Below average		Average		Above average		KW (p)
	F	%	F	%	F	%	
Individual sport participation							13.82 (0.01)
No, never	28	56.00	665	50.26	184	42.01	
Yes, but quit	12	24.00	347	26.23	131	29.91	
Yes, still participating	10	20.00	310	23.43	123	28.08	
Missing	0	0.00	1	0.08	0	0.00	
Team sport participation							22.69 (0.001)
No, never	19	38.00	471	35.60	105	23.97	
Yes, but quit	9	18.00	335	25.32	115	26.26	
Yes, still participating	22	44.00	515	38.93	217	49.54	
Missing	0	0.00	2	0.16	1	0.23	
Experience in sport							13.01 (0.01)
Never participated	16	32.00	322	24.34	87	19.86	
< 1 year	17	34.00	472	35.68	140	31.96	
2-5 years	12	24.00	324	24.49	124	28.31	
> 5 years	5	10.00	205	15.50	87	19.86	
Missing	0	0.00	0	0.00	0	0.00	

Table 4. Descriptive statistics and differences in sport participation factors between groups based on paternal education (KW – Kruskal–Wallis ANOVA test)

	Elementary		High school		College degree		University degree		KW (p)
	F	%	F	%	F	%	F	%	
Individual sport participation									54.11 (0.001)
No, never	120	62.18	364	54.82	206	45.47	187	37.18	
Yes, but quit	39	20.21	168	25.30	128	28.26	155	30.82	
Yes, still participating	34	17.62	131	19.73	119	26.27	161	32.01	
Missing	0	0.00	1	0.15	0	0.00	0	0.00	
Team sport participation									17.11 (0.001)
No, never	85	44.04	235	35.39	140	30.91	135	26.84	
Yes, but quit	44	22.80	159	23.95	113	24.94	144	28.63	
Yes, still participating	64	33.16	267	40.21	200	44.15	224	44.53	
Missing	0	0.00	3	0.45	0	0.00	0	0.00	
Experience in sport									44.83 (0.001)
Never participated	74	38.34	161	24.25	102	22.52	88	17.50	
< 1 year	74	38.34	237	35.69	152	33.55	166	33.00	
2-5 years	23	11.92	169	25.45	111	24.50	159	31.61	
> 5 years	22	11.40	97	14.61	88	19.43	90	17.89	
Missing	0	0.00	0	0.00	0	0.00	0	0.00	

cant differences among groups were found for all sport factors. Individual sport participation was lowest in children whose fathers were elementary educated only (KW=54.11, p<0.001), and similar results were found for team sport participation (KW=17.11, p<0.001) and experience in sports (KW=44.83, p<0.001). A clear trend of higher sport participation in children whose parents were better educated was obvious from the results of overall sport participation (38%, 24%, 22%, and 17% who declared that they never participated in sports for

children whose fathers were elementary educated only, those whose fathers finished high school, college, and university, respectively) (Table 4).

When maternal education was used as a grouping variable, children differed in individual sport participation (KW=85.11, p<0.001), team sport participation (KW=28.34, p<0.001), and experience in sport (KW=108.54, p<0.001), with greater participation and longer experience in children whose mothers were better educated (Table 5).

Table 5. Descriptive statistics and differences in sport participation factors between groups on the basis of maternal education (KW – Kruskal–Wallis ANOVA test)

	Elementary		High school		College degree		University degree		KW (p)
	F	%	F	%	F	%	F	%	
Individual sport participation									85.11 (0.001)
No, never	200	63.69	371	52.92	178	45.29	127	31.44	
Yes, but quit	66	21.02	183	26.11	107	27.23	134	33.17	
Yes, still participating	48	15.29	147	20.97	108	27.48	142	35.15	
Missing	0	0.00	0	0.00	0	0.00	1	0.25	
Team sport participation									28.34 (0.001)
No, never	139	44.27	247	35.24	118	30.03	91	22.52	
Yes, but quit	68	21.66	165	23.54	102	25.95	125	30.94	
Yes, still participating	107	34.08	287	40.94	172	43.77	188	46.53	
Missing	0	0.00	2	0.18	1	0.25	0	0.00	
Experience in sport									108.54 (0.001)
Never participated	121	38.54	182	25.96	77	19.59	45	11.14	
< 1 year	117	37.26	252	35.95	137	34.86	122	30.20	
2-5 years	38	12.10	171	24.39	112	28.50	141	34.90	
> 5 years	38	12.10	96	13.69	67	17.05	96	23.76	
Missing	0	0.00	0	0.00	0	0.00	0	0.00	

Discussion

The results revealed several important findings. First, the significant correlation between gender and various factors of sport participation revealed greater sport participation among boys than among girls. Second, higher sport participation is found in urban children. Third, paternal education and socioeconomic status are strongly positively correlated with sport participation in early adolescent children from Kosovo. Therefore, our initial study hypothesis can be accepted.

Our findings of higher sport participation in boys than in girls are in agreement with the results of previous studies conducted globally. For example, in a U.S. study, boys had greater sport participation than girls did, especially White and Asian students did, which is consistent with the findings of another U.S. study in which boys had higher overall sport participation and physical activity levels than girls did (Hebert et al., 2015; Pharr & Lough, 2014). Asian and European studies also regularly reported that boys are more involved in sports than girls are (Emmonds et al., 2024), while there is conclusive evidence of higher participation in sports among boys than among same-age girls in the territory of southeastern Europe (Sunda et al., 2022; Tahiraj et al., 2016).

However, most of the previous studies have examined this issue in older adolescents; therefore, our findings are relatively novel from the perspective of the participants’ age (e.g., we examined younger children than the majority of the previous

studies did). Despite differences in sample characteristics between our study and previous studies, there is likely not much difference in factors that actually resulted in our results. First, sports are often perceived as a more masculine domain, and boys are encouraged to be active and competitive from a young age. Girls, on the other hand, may be steered toward less physically demanding activities or face societal pressures to prioritize appearance over athleticism (Plaza et al., 2017). Therefore, girls’ lower participation in sports could be at least partially influenced by such gender stereotypes.

Further, girls may have fewer opportunities to participate in sports because of limited funding, fewer female coaches and role models. One specific reason could be the lower emphasis on girls’ sports programs in schools and communities. In our experience, this is particularly possible in Kosovo simply because “female-oriented sports” (i.e., gymnastics, dance) are not as common as those known to be more popular in boys (i.e., team-sport games, martial arts, etc.). Next, concerns about safety, harassment, and body image generally discourage girls (and their parents) from participating in sports, especially during childhood and adolescence. Specifically, since parents play a crucial role in encouraging their children to participate in sports, some of them may be less supportive of their daughters participating in sports because of concerns about injury, time commitment, or gender norms (Brackenridge, 1998).

As with the previously discussed association between gen-

der and sport participation, the finding of greater participation in sports among urban children than among their rural peers is also expected and well supported in previous studies (Zenic et al., 2020). In general, the greater degree of participation in sports for urban children than for their rural peers stems from a complex interplay of factors, primarily revolving around access, opportunities, and sociocultural norms. First, and probably most important, urban areas tend to have a denser concentration of sports facilities, organized leagues, and specialized training programs. This greater availability translates into easier access and more opportunities for children to engage in various sports (Zenic et al., 2020). This is related not only to variety programs but also to distance from home to sport facilities, which is another important factor of participation in sports during this time simply because of security issues and organizations.

Socioeconomic factors also play important roles in participation in sport, and urban areas often have a wider range of socioeconomic groups. This logically implies that there will be a significant number of financially better situated families that will be in a position to assure proper support for their children for sport participation (i.e., sport equipment, fees). Additionally, urban environments might place greater emphasis on organized sports as a means of recreation, social development, and even future opportunities. This sociocultural value can lead to increased parental encouragement and peer influence for children to participate in sports.

In contrast, rural areas have specific boundaries with respect to sport participation. First, and most importantly rural areas may have fewer sports facilities, and organized leagues may be less prevalent or cater to a limited range of sports. This is particularly specific for girls' participation in sports (please see the previous discussion on the influence of gender on sport participation and the underrepresentation of "female-oriented sports" in general, which are even more common in rural areas). Furthermore, lower average incomes in rural areas can pose a barrier to sport participation because of the costs involved. Additionally, long distances to sports facilities and programs can create logistical hurdles, particularly for families without reliable transportation (Kellstedt et al., 2021). Finally, in some rural communities, sports might not be as highly prioritized or culturally ingrained compared with other activities such as outdoor recreation or farm work, creating a specific set of limitations for sport participation in rural communities.

Although sociodemographic factors are frequently studied in relation to sport participation in children and adolescents, to the best of our knowledge, this is one of the first studies to examine this issue in the territory of Kosovo, especially considering the (i) relatively large number of tested participants, (ii) participants' young age, and (iii) variety of socioeconomic and sport factors observed. From this perspective, the associations between familial factors, as a specific group of sociodemographic factors, and sport participation are particularly interesting. While the association between (better) familiar socioeconomic status and (higher) prevalence of sport participation in children has been previously discussed, in the following text, we will provide an overview of the theoretical background of the association between parental education and children's sport participation.

In general, studies have confirmed a positive association between parental education and sport participation in children (Kantomaa et al., 2007; Koçak et al., 2002). Therefore,

strong positive association between both paternal and maternal education and sport participation in Kosovar children are in line with the findings of previous research. In explaining such findings, several important factors should be elaborated.

First, it is generally accepted that (better) educated parents may be more likely to recognize the importance of sports for their children's physical and mental well-being, encouraging participation in childhood and adolescence are numerous and include both health-related benefits and social benefits (Knight et al., 2017). As a result, better educated parents are more likely to be aware of these benefits and are more interested in supporting and encouraging their children to be involved in sports. Importantly, educated parents are often involved in physical activities and sports themselves (Moore et al., 1991). Therefore, active parents serve as positive role models for their children, fostering an active lifestyle. This is naturally connected to the fact that parents who are well educated are more likely to place special emphasis on education and overall development. In other words, parents with higher education levels may view sports as an integral part of their children's holistic development, promoting participation for its benefits beyond physical fitness.

Despite this greater awareness and value placed on physical activity and sport activities and their benefits for more educated parents, this positive correlation can be interpreted while focusing more on socioeconomic factors that are naturally connected to the educational status of parents. In brief, higher education levels of parents are often associated with higher socioeconomic status of the family. This may simply enable parents to afford sports equipment, fees, and transportation, facilitating their children's involvement in sports. However, it must be emphasized that while higher education is often linked to higher socioeconomic status, this is not always the case. The influence of parental education on sport participation may be intertwined with the family's financial resources and access to opportunities, cultural and social norms (i.e., expectations), individual child factors (i.e., interest, capabilities, health issues, motivation), and other factors. However, in large samples such as the one we observed in this study the general tendency toward greater sport involvement for children who are raised by better educated parents will be identified.

The most important limitation of this study is its cross-sectional design. Therefore, although some causalities can be intuitively interpreted (i.e., male gender or higher parental education are definitively "the causes" of higher sport participation, and not vice versa), for more profound analyses, prospective studies are warranted. Additionally, the participants self-reported all the variables; therefore, a certain tendency toward "socially desirable answers" could be expected. On the other hand, this is one of the first studies examining the factors associated with sport participation in Kosovar children. Additionally, we employed a relatively large number of participants, both from rural and urban communities, which are important strengths of the investigation.

Conclusion

The greater participation of boys in sports is a complex issue rooted in various sociocultural, biological, and psychological factors. Addressing this disparity requires challenging traditional gender norms, providing equal opportunities for girls in sports, and fostering a more inclusive and supportive

environment for all children.

Urban children often benefit from a more conducive environment for sports participation, with greater access to facilities, programs, and a cultural emphasis on sports. Rural children, on the other hand, can face significant barriers to participation due to limited resources, transportation challenges, and differing cultural norms. Addressing these disparities through increased investment in rural sports can provide more equitable

opportunities for all children to engage in sports.

Higher parental education was found to be associated with increased sport participation in children. However, this relationship is multifaceted and influenced by various socio-economic, cultural, and individual factors. Regardless of the background, parental involvement and support, regardless of their education level, play crucial roles in fostering children's engagement in sports and promoting a healthy, active lifestyle.

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Conflicts of interest

The authors declare that there are no conflict of interest.

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