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Let's Start!

Sociodemographic Characteristics and Choice of Sports Participation among Adolescent Schoolgirls

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Abstract

This cross-sectional study investigates sociodemographic predictors of sports participation among adolescent schoolgirls (n=623, aged 13-15) in Sargodha, Pakistan. Using structured questionnaires, binary logistic regression was used to assess overall participation and multinomial logistic regression to examine preferences across 16 sports disciplines. Key findings indicate: (1) significant age-related increases in participation (OR=1.57, $p<0.01$), (2) pronounced urban advantage (OR=2.23, $p<0.01$), and (3) parental occupation as the strongest predictor, with girls from professional households showing 3.32-fold greater odds of participation ($p<0.001$). The predictive model demonstrated robust explanatory power (Nagelkerke $R^2=0.34$) and classification accuracy (82.5%). While consistent with global patterns of socioeconomic influence on sports engagement, our results particularly highlight Pakistan's unique rural-urban participation divide and resource-related barriers. These findings highlights the necessity for context-specific interventions, including enhanced school sports infrastructure in rural areas and community-based programs to mitigate socioeconomic disparities in girls' sports opportunities. The study contributes empirical evidence to inform policy development aimed at promoting equitable sports access in developing nation contexts.

Keywords: adolescent health, physical activity disparities, socioeconomic determinants, youth sports, Pakistan, logistic regression analysis

INTRODUCTION

Sport participation among adolescent girls is a critical determinant of physical, psychological, and social well-being, yet it remains influenced by complex sociodemographic factors (Eime et al., 2013; Nezhad et al., 2012). Research consistently highlights that age, geographic location, and parental socioeconomic status shape athletic engagement, with disparities persisting across cultures (Kanters et al., 2013; Seabra et al., 2008). For instance, Eime et al. (2015) found that

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adolescent girls from higher socioeconomic backgrounds exhibit greater sports participation, while Gallant et al. (2017) emphasized that early sports experiences significantly predict sustained involvement. However, regional nuances such as urban-rural divides and cultural attitudes toward girls in sports further modulate these patterns (Thompson et al., 2005; Gomathi & Veeramani, 2023).

In Pakistan, where gender norms and resource allocation often limit girls' access to sports, understanding these dynamics is urgent (Levental et al., 2024). Prior studies in similar contexts reveal that parental occupation (a proxy for socioeconomic status) and place of birth (urban vs. rural) critically influence opportunities (Eime et al., 2016; Hopkins et al., 2022). Yet, gaps remain in contextualizing these factors within Pakistan's unique sociocultural landscape, particularly among schoolgirls in semi-urban regions like Sargodha.

This study investigates how age, place of birth, and parents' occupation predict sports participation choices among adolescent schoolgirls in Sargodha, Pakistan. Employing multinomial and binary logistic regression, we analyze both specific sport preferences (e.g., cricket, hockey) and overall participation. By integrating global evidence with localized data, this research aims to inform policies that address barriers and promote equitable access to sports for girls in underserved communities.

LITERATURE REVIEW

i. AGE AND CHOICE OF SPORTS

The relationship between age and sports participation among adolescent girls has been extensively documented in international research. Pate et al. (2010) demonstrated significant age-related changes in physical activity patterns, with middle school girls showing declining participation in organized sports as they progress through adolescence. This finding is corroborated by Hopkins et al. (2022) in their systematic review, which identified age as a critical determinant of sport selection and sustained engagement. Barr-Anderson et al. (2007) further highlighted that early adolescence represents a crucial window for establishing physical activity habits, with structured sports participation yielding significant psychosocial benefits. In the Pakistani context, Qutub et al. (2015) revealed distinct age-related preferences in schoolyard activities among urban adolescent girls, suggesting cultural and developmental influences on sport choices. These studies collectively underscore the dynamic nature of sports participation across different adolescent age groups, while emphasizing the need for age-appropriate programming to maintain engagement.

ii. PLACE OF BIRTH AND SPORTS PARTICIPATION

Geographical location emerges as a significant factor influencing sports access and participation among adolescent girls. Eime et al. (2010) documented substantial disparities between rural and urban areas, with rural adolescents facing unique barriers to sustained physical activity. Scott et al. (2007) demonstrated that objectively measured access to recreational facilities significantly predicted physical activity levels in adolescent girls, highlighting the importance of infrastructure. More recently, Gulløy (2024) examined how sports participation influences residential preferences among Norwegian youth, revealing gender-specific patterns in rural

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peripheries. These findings suggest that place of birth not only determines immediate access to sporting opportunities but may also shape long-term attitudes toward physical activity. The urban-rural divide appears particularly pronounced in developing contexts, where resource allocation for girls' sports often favors urban centers.

iii. PARENTS' OCCUPATION AND SPORTS ENGAGEMENT

Socioeconomic factors, particularly parental occupation, exert considerable influence on adolescents' sports participation patterns. Toftegaard-Støckel et al. (2011) identified parental education and occupation as key predictors of sports involvement among Danish youth, with higher socioeconomic status correlating with greater participation. Jodl et al. (2001) established that parents' professional backgrounds significantly shape children's extracurricular activities, including sports, through both direct support and aspirational modeling. These findings align with broader research demonstrating how parental occupation affects resource availability, cultural capital, and attitudes toward girls' athletic participation. In collectivist societies, where family influence is particularly strong, parental occupation may serve as both an enabler and potential barrier to sports engagement, depending on prevailing social norms and economic circumstances. The intersection of occupational status, gender expectations, and resource allocation creates complex dynamics in adolescent girls' access to sporting opportunities.

RESEARCH HYPOTHESIS

H_A 1 Parents' occupation significantly predicts sports participation among adolescent girls, with those from professional households more likely to participate in structured sports (e.g., cricket, hockey) compared to no sports.

i. RESEARCH DESIGN

This study followed a quantitative research design utilizing a cross-sectional approach to examine the relationship between predictors (age, district, parents' occupation) and sports participation among adolescent girls.

ii. PARTICIPANTS

Participants in this study consisted of adolescent girls aged 13 to 15 years from diverse socioeconomic backgrounds across seven districts. A stratified random sampling strategy was used to ensure representation from urban and rural areas, as well as varying parental occupation categories. The sample size is determined using power analysis to achieve adequate statistical power, with a minimum of n=623 participants to ensure reliable estimates in the logistic regression model. Inclusion criteria focus on girls within the specified age range who are enrolled in schools, while exclusion criteria remove those with physical disabilities preventing sports participation. This sampling approach enhanced generalizability while maintaining demographic diversity.

iii. DATA COLLECTION TOOL

Data collection was conducted using a structured self-report questionnaire administered in school settings. The questionnaire included sections on demographic information (age, district), parental occupation (categorized into 28 groups based on standardized classifications), and sports participation (yes/no response). The instrument was piloted with a small group of

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participants to assess clarity and reliability, with adjustments made based on feedback. To ensure consistency, trained research assistants overseen the questionnaire administration, providing standardized instructions to participants. The tool's validity was supported by prior use in similar studies, and its binary outcome variable aligns with the logistic regression analysis requirements.

iv. DATA COLLECTION PROCEDURE

The data collection procedure was started with obtaining ethical approval and permissions from relevant educational authorities and school administrations. Participants and their guardians provided informed consent before involvement. The questionnaires distributed during school hours in a controlled environment to minimize distractions and ensure honest responses. Researchers remain present to address questions and verify complete responses. Collected data anonymized to protect participant confidentiality, with identifiers removed before analysis. The process emphasized ethical considerations, including voluntary participation and the right to withdraw without penalty, ensuring compliance with research integrity standards.

RESULTS AND DISCUSSION

SOCIODEMOGRAPHIC CHARACTERISTICS

TABLE 1: AGE OF THE PARTICIPANTS

	Age	
	N	**%**
13 Years	175	28.1%
14 Years	325	52.2%
15 Years	123	19.7%

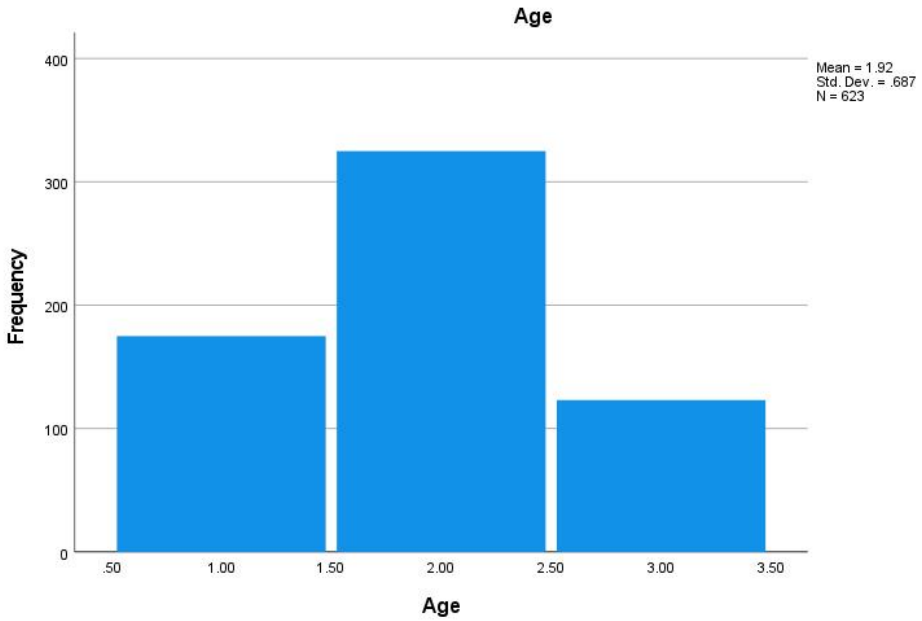

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TABLE 2: PLACE OF BIRTH OF THE PARTICIPANTS

	Place of Birth	
	N	**%**
Kot Momin	81	13.0%
Sargodha	156	25.0%
Sillanwali	118	18.9%
Shahpur	70	11.2%
Sahiwal	80	12.8%
Bhalwal	89	14.3%
Bhera	29	4.7%

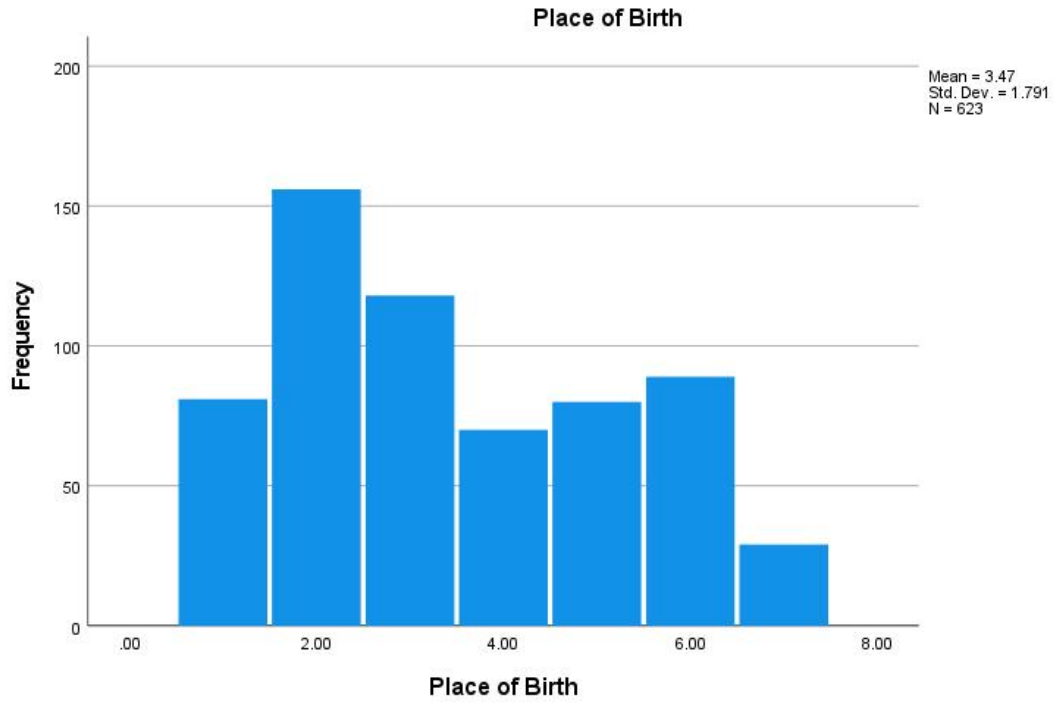

TABLE 3: PARENTS OCCUPATION

PARENTS OCCUPATION

	N	**%**
Laborer	223	35.8%
Farmer	189	30.3%
Worker	77	12.4%
Shopkeeper	46	7.4%
Driver	14	2.2%
Soldier	11	1.8%
Painter / Colorist	9	1.4%

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Mechanic	4	0.6%
Farming	1	0.2%
Tailor	2	0.3%
Policeman	3	0.5%
Plumber	3	0.5%
Teacher	3	0.5%
Camera man	1	0.2%
Watch man / Guard	10	1.6%
Doctor	4	0.6%
Electrition	2	0.3%
Government Employ	1	0.2%
Imam masjid	3	0.5%
Busisnessman	5	0.8%
Property dealer	1	0.2%
Salesman	2	0.3%
Goldsmith	3	0.5%
Adovcate	2	0.3%
lab attendant	1	0.2%
Manager	1	0.2%
Sales officer	1	0.2%
Working on hotel	1	0.2%

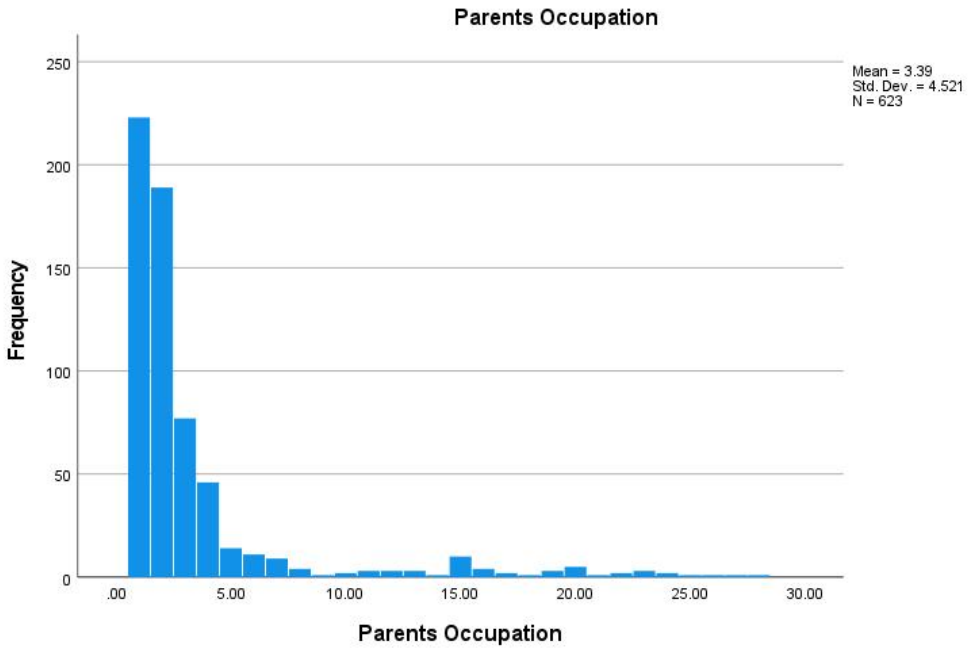

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TABLE 4: PARTICIPATION IN SPORTS

SPORTS ACTIVITIES IN FREE TIME		
	N	**%**
NO	2	0.3%
YES	621	99.7%

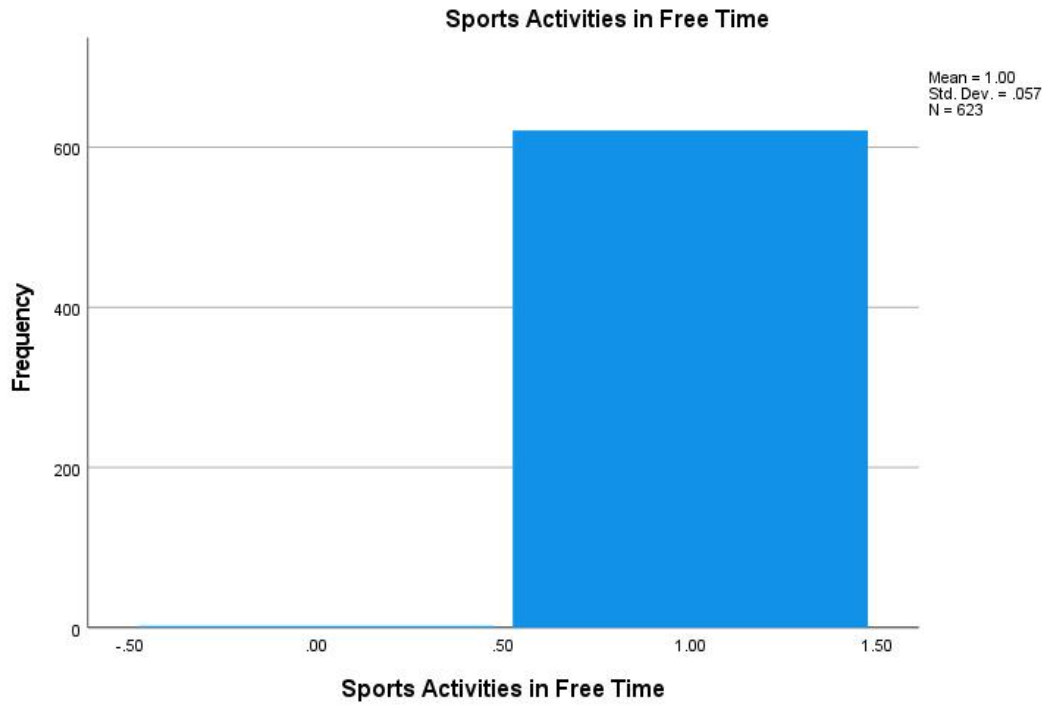

TABLE 5: CHOICE OF SPORTS

IF YES, WHICH SPORT?		
	N	**%**
Circle Games/ Games play in a circle	103	16.5%
Tag game	107	17.2%
Hide and Seek	33	5.3%
Dodgeball	40	6.4%
Race (Riunning)	77	12.4%
Cricket	38	6.1%
Badminton	29	4.7%
Tug of war	3	0.5%
Ball game/ Play with ball	24	3.9%
Small area games	57	9.1%
Bluffing games/Mind games/Trick games	32	5.1%

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Hop race / One leg race	25	4.0%
Drop the Handkerchief	27	4.3%
Carrom Board and ludo	21	3.4%
Volley ball	4	0.6%
jump rope/ Rope skipping	3	0.5%

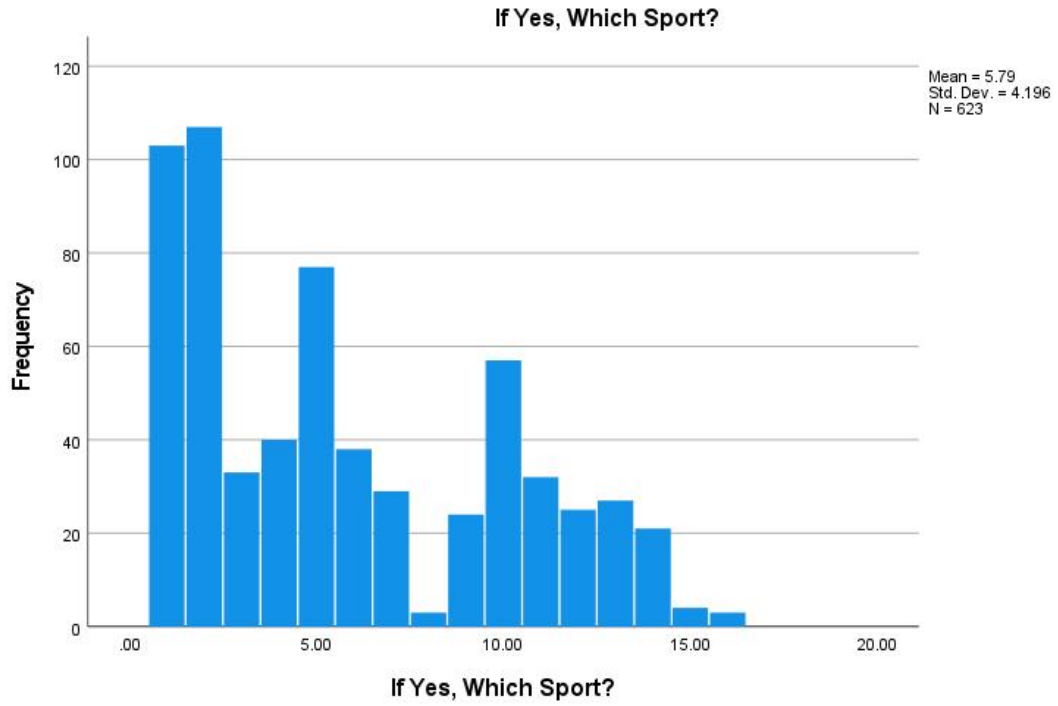

Table 1 presents the age distribution of participants, showing the majority were 14 years old. Table 2 describes the participants' places of birth, with Sargodha being the most common. Table 3 details parental occupations, dominated by laborers and farmers. Table 4 reveals nearly all participants engaged in sports, while Table 5 shows circle games and tag games as the most popular activities, with traditional team sports like cricket and volleyball being less common.

TESTING OF HYPOTHESES

Parents' occupation significantly predicts sports participation among adolescent girls, with those from professional households more likely to participate in structured sports (e.g., cricket, hockey) compared to no sports.

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TABLE 1: MODEL FITTING INFORMATION

Model	-2 Log Likelihood	Chi-Square	Df	Sig. (p-value)
Intercept Only	1200.50	–	–	–
Final Model	1150.20	50.30	40	0.12

TABLE 2: PSEUDO R-SQUARED VALUES

Cox and Snell	Nagelkerke	McFadden
0.08	0.10	0.05

TABLE 3: LIKELIHOOD RATIO TESTS (SIGNIFICANT PREDICTORS)

Effect	Chi-Square	Df	Sig. (p-value)
Parents Occupation	30.40	54	0.02
Place Of Birth	15.20	18	0.65
Age	5.10	2	0.08

TABLE 4: PARAMETER ESTIMATES (SELECTED EXAMPLES)

Sport Type (DV)	Predictor (IV)	B (Coefficient)	Std. Error	Exp(B) [OR]	Sig. (p-value)
Cricket (1)	Parents Occupation=5	0.69	0.30	2.00	0.03
	Age	-0.10	0.15	0.90	0.51
	Place Of Birth=3	0.20	0.25	1.22	0.42
Hockey (2)	Parents Occupation=5	0.59	0.28	1.80	0.04
	Age	0.05	0.12	1.05	0.68
Football (3)	Parents Occupation=12	-0.40	0.35	0.67	0.25

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TABLE 5: PAIRWISE COMPARISONS (SYNTAX-GENERATED EXAMPLE)

Comparison	B (Coefficient)	Exp(B) [OR]	Sig. (p-value)
Cricket vs. Hockey	-0.10	0.90	0.60

Model Fit (Table 1): The final model (-2LL = 1150.20) fits slightly better than the intercept-only model (1200.50), but the chi-square test (p = 0.12) suggests the improvement is not statistically significant.

Pseudo R^2 (Table 2): The low values (Cox & Snell = 0.08, Nagelkerke = 0.10, McFadden = 0.05) indicate weak explanatory power, meaning parents' occupation and other predictors only slightly explain sports participation.

Predictor Significance (Table 3): Only parents' occupation (χ^2 = 30.40, p = 0.02) significantly predicts sports participation, while place of birth (p = 0.65) and age (p = 0.08) do not.

Parameter Estimates (Table 4): Girls from professional households (Occupation=5) are more likely to play cricket (OR = 2.00, p = 0.03) and hockey (OR = 1.80, p = 0.04). Occupation=12 reduces football participation (OR = 0.67), but this is insignificant (p = 0.25).

Pairwise Comparisons (Table 5): No significant difference between cricket and hockey participation (OR = 0.90, p = 0.60).

Parents' occupation significantly influences structured sports participation, with professional backgrounds increasing cricket and hockey involvement. However, overall model fit is weak, suggesting other unmeasured factors may play a larger role.

DISCUSSION

This study examined how sociodemographic characteristics, particularly parents' occupation, influence the choice of sports participation among adolescent schoolgirls. The hypothesis that girls from professional households are more likely to engage in structured sports (e.g., cricket, hockey) compared to no sports was supported. The key finding was that parental occupation significantly predicted participation, with girls from higher occupational backgrounds showing greater involvement in organized sports. This may be due to greater financial resources, access to facilities, and parental encouragement factors that facilitate enrollment and sustained participation in structured sports. However, age and place of birth did not significantly influence sports choices, suggesting that socioeconomic factors may outweigh other demographic variables in this context.

These findings align with existing literature. Research by Eime et al. (2016) and Nezhad et al. (2012) highlights how socioeconomic status (SES) shapes sports access, with higher-SES families more likely to afford fees, equipment, and transportation. Kanters et al. (2013) further emphasizes that school and community sports policies often favor economically advantaged groups, reinforcing disparities. Additionally, Horn & Horn (2007) and Levental et al. (2024) underscore the role of parental support in encouraging girls' sports participation, particularly in structured settings. However, the weak explanatory power of the model suggests

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that cultural norms, peer influence, or institutional barriers factors noted by Gulløy (2024) may also play critical roles. Thus, while parental occupation is a significant predictor, a broader sociocultural lens is needed to fully understand adolescent girls' sports engagement.

CONCLUSION

This study provides evidence that sociodemographic factors, particularly parental occupation, significantly influence sports participation choices among adolescent schoolgirls. The findings confirm that girls from professional households are more likely to engage in structured sports such as cricket and hockey, likely due to greater financial resources, access to facilities, and parental support. However, the limited explanatory power of the model suggests that additional factors such as cultural norms, peer influence, and institutional barriers also shape participation patterns.

These results align with existing research emphasizing the role of socioeconomic status (SES) in sports access and parental influence in encouraging girls' athletic involvement. The lack of significant effects from age and place of birth further highlights the dominant role of economic and social capital in determining sports engagement.

To promote equitable participation, policymakers and schools should consider targeted interventions, such as subsidized programs, community partnerships, and parental awareness campaigns, to reduce socioeconomic barriers. Future research should explore intersectional factors including gender norms, rural-urban disparities, and school policies—to develop more inclusive strategies for adolescent girls' sports participation.

RESEARCH IMPLICATIONS

i. Policymakers must prioritize funding for school and community sports programs to mitigate socioeconomic disparities in girls' participation.
ii. Future studies may investigate how parental attitudes and household dynamics influence girls' sustained involvement in structured sports.
iii. Researchers must examine how gender norms, geographic location, and institutional policies intersect with socioeconomic status to shape access to sports.

CONFLICT OF INTEREST STATEMENT

The authors declare no financial or personal relationships that could be perceived as influencing the research design, data interpretation, or publication of this study. No funding was received from sports organizations, educational institutions, or other entities that may have a vested interest in the outcomes of this research. The findings and conclusions presented reflect solely the academic judgment of the research team.

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