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Sports Activity Level and Behavioral Maladjustment Among Male Secondary School Students in Tehran Province, Iran: A Cross-Sectional Survey

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A B S T R A C T

Behavioral problems during adolescence can disrupt academic performance, social adjustment, and long-term wellbeing. Sport and physical activity have been proposed as modifiable school-based factors that may support healthier psychosocial development. This study examined the association between sports activity level and behavioral maladjustment among male secondary school students in Tehran Province, Iran. The study used an applied, descriptive-survey design. The statistical population comprised 20,513 male students from selected counties of Tehran Province. Using two-stage cluster sampling with proportional allocation based on the Krejcie and Morgan table, 377 students were required; 400 questionnaires were distributed and 361 were analyzed. Data were collected using a researcher-developed questionnaire that included demographic and sports-activity items and a behavioral maladjustment scale. Face validity was confirmed by 10 experts in psychology and sport management, and internal consistency was acceptable (Cronbach's alpha = 0.81). Students were classified into four groups: no sports activity, low activity, moderate activity, and high activity. One-way analysis of variance (ANOVA) and Tukey post hoc tests were used. More than half of the students (52.9%) were in the low-activity group, whereas 15.0% were in the high-activity group and 6.4% reported no sports activity. Football was the most common preferred sport, followed by bodybuilding. Mean behavioral maladjustment scores differed markedly across activity levels: no activity 3.20 ± 0.85, high activity 2.02 ± 0.41, moderate activity 2.27 ± 0.32, and low activity 3.62 ± 0.62. The between-group difference was statistically significant, $F(3, 357) = 190.54$, $p < 0.001$. Tukey comparisons showed that the high-activity group had significantly lower maladjustment scores than the no-activity, moderate-activity, and low-activity groups. Higher sports activity was associated with lower behavioral maladjustment scores among male secondary school students. The findings support strengthening school-based opportunities for regular sport participation, while future research should use standardized behavioral instruments and longitudinal designs to clarify causality.

Keywords: *sport participation; physical activity; behavioral maladjustment; male adolescents; secondary school.*

1. Introduction

Adolescence is a developmentally sensitive period in which school experiences, peer relationships, family conditions, and broader social structures shape both immediate functioning and longer-term health trajectories (1-4). Behavioral problems in this period are not only educational concerns; they can also affect social adaptation, emotional wellbeing, and later risk behaviors. Because schools are the primary institutional setting in which adolescents spend much of their daily lives, they are a strategic context for preventive action. Physical activity is one of the most widely discussed protective factors in adolescent health. Evidence synthesized in major reviews shows that regular physical activity is associated with multiple benefits in school-aged youth, including improved physical health, lower depressive symptoms, better self-esteem, and healthier psychosocial functioning (5, 6). The evidence base summarized for the 2020 World Health Organization guidelines also supports regular moderate-to-vigorous activity for children and adolescents and underscores the potential harms of prolonged sedentary behavior (7, 8). Sport participation may offer benefits beyond energy expenditure alone. Systematic reviews have linked youth sport participation with better self-esteem, improved social interaction, and fewer depressive symptoms, with team sport often showing particularly strong psychosocial value because of its relational and cooperative structure (7). Longitudinal and observational work has further suggested that sports participation may protect against depression and suicidal ideation through pathways such as self-esteem and social support (9). Mechanistic reviews likewise indicate that psychosocial processes—such as self-perceptions, self-regulation, and social relationships—are plausible pathways through which physical activity contributes to mental health (10). At the same time, the relationship between sport and adolescent behavior is not automatically positive. Reviews of delinquency-related outcomes show that sports participation is not uniformly associated with lower juvenile delinquency, and the direction of association may depend on peer context, type of sport, and the moral climate created by adults (11-14). Studies have shown that organized sport can promote prosocial behavior when coaches maintain positive relationships and foster a constructive sociomoral environment, whereas deviant peer affiliations and unstructured socializing can weaken or even reverse protective effects in some groups (12-14). This complexity suggests that sport should not be treated as a universally beneficial exposure in all contexts; rather, its developmental value likely depends on how it is structured, supervised, and integrated into school and community life. Even so, the broader literature on life-skill development and positive youth development indicates that well-designed sport environments can support responsibility, social competence, and emotional regulation among vulnerable adolescents (15, 16). These outcomes are directly relevant to behavioral maladjustment in school settings. Despite growing international evidence, research on sport and behavioral problems in Iranian adolescent populations remains limited, particularly in large school-based samples from the counties of Tehran Province. The present study therefore examined whether behavioral maladjustment scores differed across four levels of sports activity among male secondary school students. Given the practical importance of low-cost, school-based prevention strategies, this question has direct implications for educational planning and student wellbeing.

2. Methods and Materials

2.1. Study design and setting

This study was an applied, descriptive-survey investigation. It was conducted among male secondary school students in selected counties of Tehran Province, Iran, including Baharestan 1, Baharestan 2, Eslamshahr, Robat Karim, Pishva, Malard, Shahriar, and Chahardangeh. To avoid a classification inconsistency in the source document regarding school cycle, the manuscript refers to the participants throughout as secondary school students.

2.2. Participants and sampling

The statistical population consisted of 20,513 male secondary school students. A two-stage cluster sampling strategy with proportional allocation was used. Based on the Krejcie and Morgan sampling table, the required sample size was 377 participants (2). A total of 400 questionnaires were distributed, 380 were returned, and 361 questionnaires were complete and retained for analysis.

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2.3. Measures

Data were collected using a researcher-developed questionnaire comprising two sections. The first section recorded demographic and sports-activity information. Sports activity level was determined using two self-report items: number of days per week devoted to sport and number of hours per week devoted to sport. Students were categorized as having high sports activity if they reported more than 5 days per week and more than 5 hours per week of sport; moderate activity if they reported 3–5 days per week and 3–5 hours per week; and low activity if they reported fewer than 3 days per week and fewer than 3 hours per week. Students who reported no sports activity were classified separately.

2.4. Behavioral maladjustment instrument

The second section of the questionnaire assessed behavioral maladjustment (referred to in the source document as behavioral abnormality). The instrument was researcher-developed. Face validity was evaluated by 10 faculty experts in psychology and sport management. Internal consistency was acceptable, with Cronbach's alpha reported as 0.81.

2.5. Statistical analysis

Descriptive statistics were calculated for sports activity level, preferred sport, and behavioral maladjustment scores. Mean differences in behavioral maladjustment across sports activity groups were examined using one-way ANOVA, followed by Tukey post hoc comparisons. Statistical significance was interpreted at $p < 0.05$. Where an arithmetic inconsistency was present in the source ANOVA table, the within-group degrees of freedom were reconstructed from the reported total sample size and number of groups.

3. Results

Among the 361 analyzed questionnaires, the majority of students reported low sports activity (52.9%), followed by moderate activity (25.8%), high activity (15.0%), and no sports activity (6.4%). Football was the most frequently preferred sport, followed by bodybuilding. Behavioral maladjustment scores were lowest in the high-activity group and highest in the low-activity group. ANOVA showed a statistically significant difference in behavioral maladjustment across activity levels, and Tukey post hoc comparisons indicated that the high-activity group differed significantly from all other groups.

Table 1. Distribution of the study population and allocated sample by county

County	Population (n)	Population share (%)	Allocated sample (n)
Baharestan 1	2,500	12.19	46
Baharestan 2	2,035	9.92	37
Eslamshahr	2,784	13.57	51
Robat Karim	3,934	19.18	72
Pishva	2,019	9.84	37
Malard	2,893	14.10	53
Shahriar	2,548	12.42	47
Chahardangeh	1,800	8.77	33

Total population = 20,513.

Table 2. Distribution of sports activity levels

Sports activity level	Frequency	Percentage
No sports activity	23	6.4
High sports activity	54	15.0
Moderate sports activity	93	25.8
Low sports activity	191	52.9

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Table 3. Preferred sports among participants

Preferred sport	Frequency	Percentage
Football	108	29.91
Volleyball	51	14.12
Basketball	8	2.21
Wrestling	33	9.14
Cycling	21	5.81
Track and field	9	2.49
Badminton/Table tennis	13	3.60
Bodybuilding	81	22.43
Martial arts	30	8.31
Other	7	1.93

Table 4. Descriptive statistics for behavioral maladjustment by sports activity level

Sports activity level	Mean	SD
No sports activity	3.20	0.85
High sports activity	2.02	0.41
Moderate sports activity	2.27	0.32
Low sports activity	3.62	0.62

Table 5. One-way ANOVA for behavioral maladjustment across sports activity levels

Source	Sum of squares	df	Mean square	F	p
Between groups	173.832	3	57.944	190.544	<0.001
Within groups	108.563	357	0.304		
Total	282.395	360			

Note. The source file reported the within-group df as 375; because the total df was 360 for N = 361 and four groups, the within-group df was reconstructed as 357 to preserve internal consistency.

Table 6. Tukey post hoc comparisons between the high-activity group and the other groups

Comparison	Mean difference	SE	p
High vs no activity	-1.17	0.13	<0.001
High vs moderate activity	-0.25	0.09	0.041
High vs low activity	-1.59	0.08	<0.001

4. Discussion

This study found a clear inverse association between sports activity level and behavioral maladjustment among male secondary school students in Tehran Province. Students with high sports activity had the lowest mean maladjustment scores, whereas students with low activity had the highest scores. The difference was not trivial: the mean difference between the high-activity and low-activity groups was 1.59 points, and the overall ANOVA effect was large. In practical terms, these results suggest that sport participation may be linked to more adaptive behavior in school-aged boys. The direction of the findings is consistent with broader research showing that physical activity is associated with better mental health and psychosocial functioning in children and adolescents (6-10). Reviews indicate that regular physical activity and sport participation are linked with lower depressive symptoms, improved self-esteem, and stronger social interaction (6-10). From a developmental perspective, this pattern is plausible because sport exposes adolescents to rules, cooperation, feedback, role acceptance, delayed gratification, and structured adult supervision—conditions that can support self-regulation and socially appropriate conduct (15, 16). At the same time, the present findings should not be interpreted in a simplistic or deterministic

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way. International evidence shows that sport does not automatically reduce antisocial or delinquent behavior in all settings (11, 13, 14). Rather, outcomes appear to depend on contextual moderators such as peer norms, type of sport, and the moral climate established by coaches and adults. Research has shown that positive coaching relationships and stronger sociomoral climates are associated with lower antisocial behavior and higher prosocial behavior among adolescent athletes (12). Conversely, peer deviance and unstructured socializing can weaken the protective potential of sports participation, especially among boys with prior externalizing tendencies (13). This contextual perspective helps explain why the current study is important for schools. The finding that the high-activity group scored more favorably than the moderate, low, and no-activity groups suggests that simply offering occasional physical activity may not be enough; the intensity, regularity, and organization of participation may matter. Schools are especially well placed to shape these features. When sport is embedded within educational goals, guided by supportive adults, and linked to school norms, it may become a practical mechanism for promoting discipline, responsibility, and social adjustment.

The descriptive results also provide useful insight into the local context. More than half of the sample fell into the low-activity category, and only 15% reported high sports activity. This pattern is notable because it suggests that the students who might benefit most from the psychosocial advantages of regular sport are underrepresented in sustained activity. The dominance of football and bodybuilding may also reflect the forms of activity that are most accessible, socially valued, or logistically feasible for boys in the study region. For school policymakers, this indicates that interventions do not necessarily need to begin with unfamiliar sports; existing interests can be used as entry points for structured, supervised participation. Several limitations should be acknowledged. First, the cross-sectional design precludes causal inference. It is possible that students with fewer behavioral problems are more likely to engage in sport, rather than sport participation leading to lower maladjustment. Second, the study relied on a researcher-developed questionnaire rather than a widely standardized behavioral assessment tool. Third, the sample included only male students from selected counties of Tehran Province, so the findings should not be generalized to girls, other age groups, or other geographic settings without caution. Finally, the source document did not provide multivariable adjustment for family, school, or socioeconomic factors that may confound the observed association. Despite these limitations, the study has practical relevance. It provides school-based evidence from a large Iranian adolescent sample showing that higher sports activity is associated with lower behavioral maladjustment. This supports the view that educational systems should treat regular sport participation not merely as recreational enrichment, but as a potentially meaningful component of student development and preventive school health.

5. Practical Implications

Schools and local education authorities can use these findings to justify stronger investment in regular, structured sport opportunities for adolescents. Increasing access to organized after-school sport, maintaining adult supervision, and linking participation to positive school values may be more effective than relying on irregular or loosely structured activity alone. Because football and bodybuilding were the most popular activities in this sample, implementation strategies can begin with sports that already attract student interest. However, the quality of the sport climate remains critical; simply expanding access without attention to mentoring, discipline, and inclusion may not yield the desired behavioral benefits.

6. Conclusion

In this sample of male secondary school students from Tehran Province, higher sports activity was associated with lower behavioral maladjustment scores. Students with high activity had significantly more favorable scores than those with no, moderate, or low activity. Although causal claims cannot be made from a cross-sectional survey, the findings support school-based sport promotion as a promising strategy for behavioral health promotion in adolescence.

Authors' Contributions

R.O.G. contributed to study conception, oversight of data acquisition, and manuscript supervision. M.B.

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contributed to methodological development, statistical interpretation, and drafting support. M.S. contributed to coordination with the school setting, support for data collection, and administrative follow-up. All authors contributed to revising the manuscript and approved the final version. This allocation of contributions should be confirmed by the authors prior to submission.

Declaration

The authors declare that artificial intelligence tools were used only to assist with language editing, translation, and improvement of the manuscript's readability. All conceptualization, study design, data collection, data analysis, interpretation of findings, and final approval of the manuscript were performed by the authors. The authors take full responsibility for the accuracy, integrity, and originality of the content.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The source file reports an anonymous questionnaire-based study in a school population, but it does not specify the approving ethics committee or approval code. Before journal submission, the authors should verify and insert the formal ethics approval details and the exact consent/assent procedures used. The present manuscript therefore avoids inventing unverified ethics identifiers.

References

1. World Medical Association. World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. JAMA. 2013;310(20):2191-4. doi: 10.1001/jama.2013.281053.
2. Krejcie RV, Morgan DW. Determining sample size for research activities. Educational and Psychological Measurement. 1970;30(3):607-10. doi: 10.1177/001316447003000308.
3. Viner RM, Ozer EM, Denny S, Marmot M, Resnick M, Fatusi A, et al. Adolescence and the social determinants of health. Lancet. 2012;379(9826):1641-52. doi: 10.1016/S0140-6736(12)60149-4.
4. Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Allen NB, et al. Our future: a Lancet commission on adolescent health and wellbeing. Lancet. 2016;387(10036):2423-78. doi: 10.1016/S0140-6736(16)00579-1.
5. Janssen I, LeBlanc AG. Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. International Journal of Behavioral Nutrition and Physical Activity. 2010;7:40. doi: 10.1186/1479-5868-7-40.
6. Biddle SJH, Asare M. Physical activity and mental health in children and adolescents: a review of reviews. British Journal of Sports Medicine. 2011;45(11):886-95. doi: 10.1136/bjsports-2011-090185.
7. Eime RM, Young WC, Harvey JT, Charity MJ, Payne WR. A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. International Journal of Behavioral Nutrition and Physical Activity. 2013;10:98. doi: 10.1186/1479-5868-10-98.
8. Chaput J-P, Willumsen J, Bull F, Chou R, Ekelund U, Firth J, et al. 2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5-17 years: summary of the evidence. International Journal of Behavioral Nutrition and Physical Activity. 2020;17(1):141. doi: 10.1186/s12966-020-01037-z.
9. Rodríguez-Ayllón M, Cadenas-Sánchez C, Estévez-López F, Muñoz NE, Mora-Gonzalez J, Migueles JH, et al. Role of physical activity and sedentary behavior in the mental health of preschoolers, children and adolescents: a systematic review and meta-analysis. Sports Medicine. 2019;49(9):1383-410. doi: 10.1007/s40279-019-01099-5.
10. Babiss LA, Gangwisch JE. Sports participation as a protective factor against depression and suicidal ideation in adolescents as mediated by self-esteem and social support. Journal of Developmental and Behavioral Pediatrics. 2009;30(5):376-84. doi: 10.1097/DBP.0b013e3181b33659.
11. Lubans DR, Plotnikoff RC, Lubans NJ. Review: a systematic review of the impact of physical activity programmes on social and emotional well-being in at-risk youth. Child and Adolescent Mental Health. 2012;17(1):2-13. doi: 10.1111/j.1475-3588.2011.00623.x.
12. Rutten EA, Stams GJJM, Biesta GJJ, Schuengel C, Dirks E, Hoeksma JB. The contribution of organized youth sport to antisocial and prosocial behavior in adolescent athletes. Journal of Youth and Adolescence. 2007;36(3):255-64. doi: 10.1007/s10964-006-9085-y.

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E-ISSN: 2981-2569

13. Gardner M, Roth J, Brooks-Gunn J. Sports participation and juvenile delinquency: the role of the peer context among adolescent boys and girls with varied histories of problem behavior. Developmental Psychology. 2009;45(2):341-53. doi: 10.1037/a0014063.
14. Lila M, Koussa M, Perrino T, Stoutenberg M, Prado G. The association of organized and unorganized physical activity and sedentary behavior with internalizing and externalizing symptoms in Hispanic adolescents. Child and Adolescent Mental Health. 2016;21(2):109-14. doi: 10.1111/camh.12139.
15. Spruit A, van Vugt E, van der Put CE, van der Stouwe T, Stams GJJM. Sports participation and juvenile delinquency: a meta-analytic review. Journal of Youth and Adolescence. 2016;45(4):655-71. doi: 10.1007/s10964-015-0389-7.
16. Hermens N, Super S, Verkooijen KT, Koelen MA. A systematic review of life skill development through sports programs serving socially vulnerable youth. Research Quarterly for Exercise and Sport. 2017;88(4):408-24. doi: 10.1080/02701367.2017.1355527.

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