

Comparison of Attitudes Toward Physical Activity Between Adolescent Athletes and Non-Athletes

Ergen Sporcular ile Sporcu Olmayanların Fiziksel Aktiviteye Yönelik Tutumlarının Karşılaştırılması

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Abstract

This study examined the differences in attitudes toward physical activity among adolescents attending different types of high schools and elite young athletes. Participants consisted of 9th and 10th grade students attending Sports High School and Anatolian High Schools in Isparta, Turkey, and male athletes on the U-16 national handball team. A quantitative descriptive design was used in the study. Data collection involved collecting personal information, height and weight values, and the Physical Activity Questionnaire (PAQ) developed by Savaş and Çelik (2013). A quantitative descriptive design was used in the research. Height and weight values and the Physical Activity Attitude Scale (FATÖ) developed by Savaş and Çelik Kayapınar (2013) were used to collect data. The T-test and one-way ANOVA were preferred for data evaluation. Comparisons revealed that U16 national handball athletes had higher BMI and body weight than Sports High School students, were taller than both school groups, and had higher attitude scores toward physical activity compared to other high school students. These findings indicate that participation in elite-level sports is associated with more positive attitudes toward physical activity and distinct body composition characteristics among adolescents. The results are noteworthy for their parallelism with the goals of Turkey's New Education Model, which emphasizes holistic development. Strengthening cooperation between schools and national sports organizations will increase young people's participation in physical activity. Future research should examine these relationships across different age groups, genders, and sports disciplines.

Keywords Adolescents, physical activity, sports high school, handball, national athletes, attitude, BMI

Öz

Bu çalışma, farklı lise türlerine devam eden ergenler ile elit genç sporcular arasında fiziksel aktiviteye yönelik tutum farklarını incelemiştir. Katılımcılar, Türkiye'nin Isparta ilinde bulunan Spor Lisesi ve Anadolu Liseleri'nde öğrenim gören 9. ve 10. Sınıf öğrencileri ile U-16 milli hentbol takımında yer alan erkek sporculardan oluşmuştur. Araştırmada nicel betimsel bir desen kullanılmıştır. Verileri toplamada, boy ve kilo değerleri ile Savaş ve Çelik Kayapınar (2013) tarafından geliştirilen Fiziksel Aktivite Tutum Ölçeği (FATÖ) kullanılmıştır. Verilerin değerlendirilmesinde T testi ve tek yönlü Anova tercih edilmiştir. Yapılan karşılaştırmalarda U16 milli hentbol sporcularının Spor Lisesi öğrencilerine göre daha yüksek BKİ ve vücut ağırlığına sahip oldukları, her iki okul grubuna kıyasla da daha uzun boylu oldukları ve diğer lise öğrencilerine kıyasla fiziksel aktiviteye karşı daha yüksek tutum puanları olduğu belirlenmiştir. Bu bulgular, elit düzeyde spora katılımın ergenlerde fiziksel aktiviteye yönelik daha olumlu tutumları ile farklı vücut kompozisyonu özelliklerine sahip olduklarını göstermektedir. Sonuçların, bütüncül gelişimi vurgulayan Türkiye'nin Yeni Eğitim Modeli'nin hedefleri ile paralelliği dikkat çekmektedir. Okullar ile ulusal spor kuruluşları arasındaki iş birliğinin güçlendirilmesi, gençlerin fiziksel aktiviteye katılımını artıracaktır. Gelecekteki araştırmaların, bu ilişkileri farklı yaş grupları, cinsiyetler ve spor branşları arasında incelemesi önerilmektedir.

Anahtar Kelimeler Ergenler, fiziksel aktivite, spor lisesi, hentbol, milli sporcular, tutum, BKİ

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Introduction

Turkey's New Education Model embraces a holistic development approach that considers the physical, mental, emotional, and social dimensions of the individual. This model emphasizes not only cognitive development but also physical and character development within the educational process. In this context, participation in physical activity and sports is regarded as a crucial tool for fostering healthy lifestyle habits, developing self-regulation skills, and supporting psycho-social adaptation in students.

Adolescence is a critical period marked by rapid physical, emotional, and social development, during which biological growth occurs at its fastest rate. This phase involves not only bodily changes but also significant psychological and social transformations. Physical activity, therefore, stands out as a fundamental element supporting the multidimensional development of adolescents (Coşkuntürk et al., 2023; Güzel, 2025). Research has demonstrated that physical activity positively influences psychological, social, and physical development during adolescence (Biddle & Asare, 2011).

Adolescence is also characterized by visible changes in body structure due to rapid biological growth (Baltacı et al., 2008). Regular physical activity during this period directly contributes to components of physical fitness such as musculoskeletal health, aerobic capacity, and muscular strength (Levy et al., 2014). Moreover, physical activity has well-documented positive effects on psychological health, helping to reduce common issues such as stress, anxiety, and depression (Schuch et al., 2016).

However, with the widespread use of technology in recent years, sedentary lifestyles and physical inactivity have increased among young people (Aydın, 2025). This trend has led to significant declines in physical activity levels and is associated with health problems such as postural disorders, spinal issues, and obesity (Uçar, 2014; De Rezende et al., 2014). Therefore, understanding the health impacts of physical activity during adolescence is critical for promoting lifelong healthy habits among youth.

Physical activity not only affects physical health but also plays an important role in shaping body image. Studies indicate that adolescents who engage in sports have more positive body perceptions compared to their non-athlete peers, with physical activity enhancing body image (Thompson & Sherman, 2010; Can & Aydın, 2025). Additionally, regular physical activity increases social adaptation, improves reasoning skills, supports emotional development, and contributes to strengthening self-esteem and confidence among young people (Blakemore, 2014; Houle et al., 2010).

While many studies have examined the effects of physical activity on adolescent development, research directly comparing attitudes toward physical activity among adolescents with varying levels of sports participation remains limited. Specifically, comparing students from sports high schools, general high schools, and elite-level young athletes addresses a significant gap in educational planning and the encouragement of physical activity among youth. The originality of this study lies in its investigation of the attitudinal dimension of physical activity in addition to physiological aspects.

Furthermore, exploring the relationship between Body Mass Index (BMI) and attitudes toward physical activity provides an opportunity to assess the interaction between physical fitness and behavioral approaches in youth. This dual perspective will offer concrete data to inform individual health assessments and the restructuring of sports education policies. Consequently, this study has the potential to guide educators, families, and policymakers in developing adolescent sports programs and raising awareness about physical activity.

Accordingly, the primary aim of this study is to compare attitudes toward physical activity among students from different types of high schools in Isparta and male under-16 handball national team players. Within this scope, the physical activity attitudes of 9th and 10th-grade students from Sports High Schools and Anatolian High Schools, alongside those of professional-level national team players, will be analyzed to examine the influence of sports on adolescents' attitudes, awareness, and physical fitness levels.

By evaluating the relationship between participants' BMI and attitudes toward physical activity, the behavioral reflections of physical fitness will also be revealed. In alignment with the principles of "holistic development," "interest- and talent-based guidance," and "raising good individuals" emphasized in Turkey's New Education Model, this study aims to contribute to raising physical activity awareness among youth, supporting healthy lifestyle skills, and more effectively integrating the educational and psychological benefits of sports within the education system.

Hypotheses:

Hypothesis 1: Under-16 male handball national team players will demonstrate higher attitudes toward physical activity compared to students from Sports and Anatolian High Schools.

Hypothesis 2: Physical activity attitude scores will differ significantly among groups according to Body Mass Index (BMI).

Hypothesis 3: There will be a significant difference in physical activity attitudes between Sports High School and Anatolian High School students, favoring Sports High School students.

Materials and Methods

Research Model

This study employed a quantitative descriptive survey design, which is appropriate for identifying and comparing current attitudes toward physical activity among defined adolescent groups. The primary objective of this design is to describe existing conditions and detect potential group differences without manipulating variables.

Participants

The target population comprised 9th and 10th grade students enrolled in Sports High School (N=48) and Anatolian High School (N=46) in the province of Isparta, Türkiye, as well as male under-16 handball national team players (N=30) officially affiliated with the Turkish Handball Federation.

Sports High Schools in Türkiye aim to provide specialized education in physical education and sport sciences, offering students opportunities to develop foundational skills in various sports disciplines. Anatolian High Schools, in contrast, emphasize academic achievement and university preparation through a general education curriculum based on students' interests and abilities (Ministry of National Education, 2025). The U-16 Handball National Team consists of elite-level male athletes under the age of 16, selected and trained by the Turkish Handball Federation for international competitions (Turkish Handball Federation, 2025).

Sampling

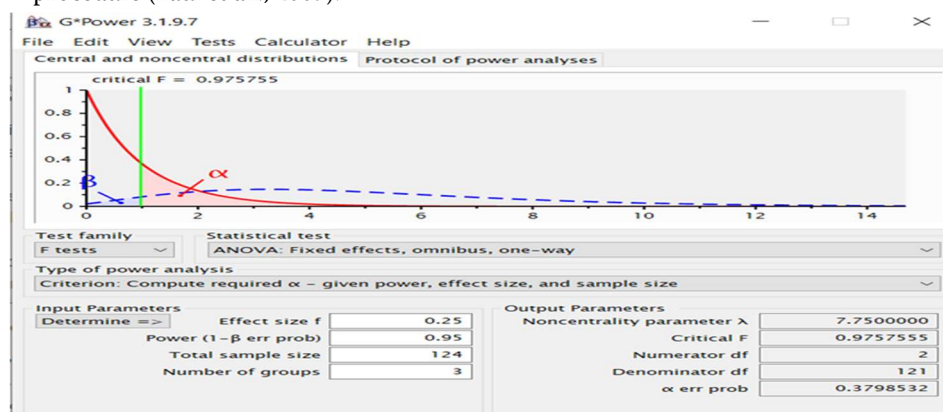
A convenience sampling method was used, based on voluntary participation and parental consent. Inclusion criteria required participants to be either (1) active 9th or 10th-grade students in one of the specified high school types or (2) official members of the under-16 national handball team. Exclusion criteria included absence of informed

consent, age outside the 14–16 range, or physical/psychological conditions preventing participation.

The sample consisted of 124 students from the 9th and 10th grades of the Sports High School (N=48) and Anatolian High School (N=46) in Isparta, Turkey, and players from the under-16 men's national handball team (N=30) officially affiliated with the Turkish Handball Federation.

Sample Size

The minimum sample size was calculated using G*Power 3.1 software, considering an effect size of 0.25, $\alpha = 0.05$, and power $(1-\beta) = 0.80$. The analysis determined a required minimum of 119 participants to ensure statistical validity. The final sample comprised 124 adolescents, who met all inclusion criteria and completed the full data collection procedure (Faul et al., 2007).



Data Collection Instruments

Data were collected using two main tools: a Personal Information Form and the Physical Activity Attitude Scale (PAAS).

Personal Information Form

This form consisted of three items designed to collect demographic data including participants' age, height (cm), and weight (kg), from which Body Mass Index (BMI) values were derived using the formula $\text{weight (kg)} / \text{height}^2 (\text{m}^2)$.

Physical Activity Attitude Scale (PAAS)

The PAAS was developed and validated by Savaş and Çelik Kayapınar (2013) to assess adolescents' attitudes toward physical activity. The scale includes 25 items rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). It comprises three subdimensions: Equipment and Tools (9 items); Health (9 items); Social Emotions (6 items). The construct validity of the scale is supported by a Kaiser-Meyer-Olkin (KMO) value of 0.86, and the total variance explained is 42.6%. Internal consistency coefficients (Cronbach's α) were 0.79, 0.80, and 0.79 for the subscales, with an overall reliability coefficient of $\alpha = 0.874$. Total scores range from 25 to 125, where higher scores indicate a more favorable attitude toward physical activity.

Data Collection Procedure

Data collection was conducted in accordance with ethical guidelines for research involving minors. All participants were under 18 years of age; therefore, written informed consent was obtained from parents or legal guardians prior to participation. All data were collected face-to-face by trained researchers under standardized conditions during school hours or national team camp sessions.

BMI values were calculated by dividing each participant's weight in kilograms by the square of their height in meters. Confidentiality of all responses was strictly maintained, and no identifiable personal information was included in the dataset. Data were stored securely and used solely for research purposes.

Data Analysis

All statistical analyses were performed using SPSS version 27.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including mean, standard deviation, frequency, percentage, skewness, and kurtosis, were calculated to summarize the data and assess distributional assumptions.

The normality of data was confirmed based on skewness and kurtosis values falling within the ± 1.5 range, indicating suitability for parametric tests (Tabachnick & Fidell, 2013; Büyüköztürk, 2019).

To compare group differences:

Independent samples t-tests were used for two-group comparisons. One-way ANOVA was employed when comparing three or more groups. Levene's test was applied to confirm the homogeneity of variances. For post hoc analysis, Bonferroni correction was applied when significant ANOVA results were observed. Effect size was interpreted using eta squared (η^2) values as follows: 0.01 = small; 0.06 = moderate; ≥ 0.14 = large (Pallant, 2003). All analyses were conducted with a significance level of $p < .05$.

Ethical Considerations

This study received ethical clearance from the Non-Interventional Clinical Research Ethics Committee of İzmir Demokrasi University (Approval No: 2025/3-5). All procedures were carried out in compliance with the ethical standards of the Declaration of Helsinki.

Results

The results section presents the comparative analysis of participants' attitudes toward physical activity, along with their height, weight, and Body Mass Index (BMI). These comparisons were conducted between male U-16 national handball players and high school students from Sports and Anatolian High Schools. The findings are organized according to the tested hypotheses and supported by statistical tables and post hoc results.

A statistically significant difference was found in total Physical Activity Attitude Scale (PAAS) scores across groups ($p < .05$), with U-16 National Team players scoring significantly higher than Anatolian High School students. The effect size was large ($\eta^2 > 0.061$), supporting Hypothesis 1. However, no significant difference was found between Sports High School and Anatolian High School students, thereby not supporting Hypothesis 3 (Table 1).

Table 1. Examination of Participants' Attitudes Toward Physical Activity by Groups.

Variable	Groups	N	X	Ss	F	P	Bonferroni	η^2
PAAS Score	Total Sports High School	48	112,19	9,53	5,87	,005	b>c	0,117
	U-16 National Team	30	115,40	8,14				
	Anatolian High School	46	105,93	12,94				

Findings related to anthropometric variables across the groups revealed that the mean height scores differed significantly according to group membership ($p < .05$). U-16

National Team players were found to be significantly taller than both Sports High School and Anatolian High School students. The effect size associated with this difference was large ($\eta^2 > 0.061$), indicating a substantial difference in height in favor of elite athletes. No statistically significant differences were observed in age values between the groups ($p > .05$), suggesting that participants were homogeneous in terms of age (Table 2).

Regarding body weight, a significant difference was identified between the U-16 National Team and the Sports High School students, with the national team athletes having higher mean body weight values ($p < .05$). This difference was also accompanied by a large effect size ($\eta^2 > 0.061$), which is considered to be related to the higher muscle mass typically observed in athletes at the elite level (Table 2).

Similarly, Body Mass Index (BMI) values differed significantly between the U-16 National Team and the Sports High School students ($p < .05$), again in favor of the national athletes. The corresponding effect size was large ($\eta^2 > 0.061$), suggesting that high-intensity and structured training programs in elite sports settings may positively influence body composition. These findings provide partial support for Hypothesis 2, indicating significant differences in BMI and body weight between the U-16 National Team and Sports High School students. However, no significant differences were observed between the Anatolian High School students and the other groups in terms of body weight and BMI (Table 2).

Table 2. Comparison of Participants' Height, Weight, and BMI Values.

	Grup	N	X	Ss	F	P	Bonferroni	η^2
Height	Sports High School	48	171,44	8,32	28,265	,000	b>a	0,318
	U-16 National Team	30	182,57	5,74				
	Anatolian High School	46	170,78	6,97			b>c	
Weight	Sports High School	48	60,21	10,66	16,39	,003	b>a	0,213
	U-16 National Team	30	76,43	14,04				
	Anatolian High School	46	61,59	14,44				
BMI	Sports High School	48	20,36	2,44	4,513	,000	b>a	0,069
	U-16 National Team	30	22,83	3,43				
	Anatolian High School	46	21,21	3,66				

Discussion and Conclusion

This study aimed to compare adolescents' attitudes toward physical activity (PA) across three distinct groups—students attending Sports High Schools, Anatolian High Schools, and elite athletes from the U-16 National Handball Team. The results revealed statistically significant differences in PA attitude scores and body composition variables (height, weight, and BMI) based on group affiliation.

The significantly higher total and mean PA attitude scores among U-16 National Team athletes compared to Anatolian High School students support the notion that elite sports participation positively shapes adolescents' attitudes toward physical activity. This finding confirms Hypothesis 1, indicating that elite-level training and structured sports environments promote more favorable perceptions of physical activity. These results are consistent with previous research showing that active engagement in sports is associated with more positive PA attitudes and behaviors (Yıldırım & Bayrak, 2019; Araújo & Dosil, 2015). Similarly, Orhan (2019) emphasized that young people actively participating in sports exhibit more favorable physical activity attitudes than their non-athlete peers. Previous research has shown that physical activity is positively associated with body-esteem in adolescents (Ahonen et al., 2023), supporting the idea that sport participation contributes not only to physical fitness but also to psychosocial well-being.

However, no statistically significant difference was found between students from Sports High Schools and those from Anatolian High Schools. This outcome partially refutes Hypothesis 3 and suggests that simply attending a Sports High School may not guarantee the same motivational and behavioral outcomes observed in elite national athletes. It can be interpreted that either those with more positive attitudes naturally gravitate toward elite sports settings or that ongoing participation in structured, high-level training environments fosters and reinforces positive attitudes toward physical activity.

With regard to anthropometric variables, significant group-based differences were found in height, weight, and BMI. Specifically, U-16 National Team athletes demonstrated significantly greater height and lower BMI values compared to students in both school-based groups. These differences support Hypothesis 2 and reflect the influence of sport-specific training, disciplined nutritional habits, and the role of physical characteristics such as height in talent selection processes. As shown by Nikolaidis and Ingebrigtsen (2013), physical attributes (particularly height) can be crucial factors in performance-based team selection among handball players. Furthermore, elite athletes are more likely to exhibit optimized body composition profiles due to regular, structured physical training (Smith et al., 2020).

The absence of significant age differences among the groups suggests that age alone is not a determining factor in PA attitudes or physical fitness levels. Instead, the frequency, intensity, and quality of sports participation appear to have a greater impact. The discrepancies observed between national athletes and high school students emphasize the need for stronger integration between school-based sports programs and federated or club-level training environments.

Implications and Recommendations

Drawing on the broader educational implications, and in line with international models of holistic youth development, several recommendations can be made:

Promote structured sport programs within educational systems that target not only physical health, but also emotional, cognitive, and social development.

Integrate elite athlete role models into school-based physical education through peer mentoring programs and sport-based learning modules to inspire positive PA attitudes. Strengthen cooperation between schools, sports clubs, and national federations, ensuring seamless transitions from school-based physical education to advanced sports training opportunities.

Re-evaluate curricula and infrastructure in Sports High Schools to ensure they foster not only performance development but also sustained motivation, enjoyment, and participation in PA.

Expand future research to include female adolescents, different sports disciplines, and longitudinal studies examining changes in PA attitudes over time, using both quantitative and qualitative approaches.

In conclusion, the study underlines the beneficial role of organized sports participation during adolescence in shaping positive attitudes toward physical activity and fostering healthier body compositions. Addressing the disparity in PA attitudes between school-based and elite sports environments should be a strategic goal for educators, policymakers, and sport practitioners aiming to cultivate a physically active, well-adjusted youth population.

Beyanlar / Declarations

Etik Onay ve Katılım Onayı / Ethics approval and consent to participate

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During the preparation and writing of this study, scientific, ethical and citation rules were followed in accordance with the 'Higher Education Institutions Scientific Research and Publication Ethics Guidelines'; no alterations were made to the collected data, and this study has not been submitted for evaluation to any other academic publication medium. The author is solely responsible for any violations that may arise in connection with this article.

Veri Ve Materyal Erişilebilirliği / Availability of data and material

Bu çalışmanın bulgularını destekleyen veriler, makul talepler üzerine sorumlu yazardan temin edilebilir. Veri seti yalnızca akademik amaçlar için erişilebilir olacak ve verilerin herhangi bir kullanımı, orijinal çalışmayı referans gösterecek ve katılımcıların gizliliğini koruyacaktır.

The data that support the findings of this study are available from the corresponding author upon reasonable request. The dataset will be accessible only for academic purposes, and any use of the data will recognize the original study and maintain the confidentiality of the participants.

Çıkar Çatışması / Competing interests

Yazarlar, bu makalede sunulan çalışmayı etkileyebilecek herhangi bir çıkar çatışması veya kişisel ilişkiye sahip olmadıklarını beyan etmektedirler.

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Yazar Katkıları / Authors' Contribution Statement

Bu çalışmada yazarlar eşit katkıya sahiptir.

The authors contributed equally to this study.

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