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Original Article

# Examining Awareness Levels Regarding the Effects of Sports on Individuals with Intellectual Disabilities Among Students at Different Levels of Education

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### What is already known on this topic?

- *It is widely accepted in the literature that sports have positive effects on the psychosocial development, motor skills, and social adaptation of individuals with intellectual disabilities.*
- *Educational level is reported as an important variable affecting individuals' attitudes and awareness toward individuals with special needs.*
- *It is known that students' level of awareness towards individuals with intellectual disabilities is related to educational experiences, level of knowledge, and opportunities for social interaction.*

### What does this study add to this topic?

- *It compares the awareness levels of students at different educational levels regarding the effects of sports on individuals with intellectual disabilities within the same sample.*
- *It demonstrates with quantitative data that university students' awareness levels are significantly higher than those of middle school and high school students.*
- *While revealing the decisive effect of gender and educational status variables on awareness, it presents a distinctive finding to the literature by showing that the department variable has no significant effect.*

## Abstract

The aim of this study is to examine the awareness levels of students at different educational stages regarding the effects of sports on individuals with intellectual disabilities. The study was conducted using a relational research design, which is one of the quantitative research methods. The participants consisted of 407 female and 343 male middle school, high school, and university students in the province of Istanbul during the 2024–2025 academic year. In addition to the participant information form, the Awareness Scale for the Effects of Sports on Individuals with Intellectual Disabilities was used in the study. The SPSS 25.0 (IBM SPSS Corp.; Armonk, NY, USA) program was used for descriptive statistical analysis of the data, and independent sample *t*-test and one-factor ANOVA analysis for unrelated samples were applied in the analysis process. As a result of the research, it was determined that the awareness levels of male participants ($\bar{X} = 113.89$), secondary school students ($\bar{X} = 117.15$), and high school students ($\bar{X} = 111.42$) were found to be at a medium level, while the awareness levels of university students in all departments towards the effects of sports on individuals with intellectual disabilities were high ($p < .05$). In addition, a statistically significant difference was found in awareness levels according to gender and education level variables ($p < .05$), but no significant difference was found according to the department variable ($p > .05$).

***Keywords:*** Awareness, intellectual disability, sport



## Introduction

Intellectual disability is a condition that emerges during the developmental period and is characterized by significant limitations in an individual's cognitive functions and adaptive behavior. Intellectual disability is classified into mild, moderate, severe, and profound levels according to the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders) criteria, and individuals exhibit a heterogeneous structure in terms of cognitive capacity, support needs, and functional skills (American Psychiatric Association [APA], 2013). The multidimensional impact of intellectual disability on an individual's cognitive and adaptive functions highlights the importance of supportive and empowering environmental factors. In this context, sports, which play a significant role in individuals' physical, psychological, and social development, are critically important for individuals with intellectual disabilities as well as the general population due to their multifaceted benefits.

Research examining the effects of sports on individuals with intellectual disabilities shows significant improvements in physical health components such as balance, muscle strength, cardiovascular system, and endurance (Aslan et al., 2025; Maicas-Pérez et al., 2024; Jacinto et al., 2021). However, it is emphasized that sports play a supportive role in helping individuals communicate more effectively with their social environment and increase their active participation in social life by supporting psychosocial gains such as self-confidence, emotional balance, and social adaptation (Aitchison et al., 2022; Shields & Synnot, 2016; Youngson et al., 2023). In light of the current literature, sports stand out as a powerful

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tool that not only supports physical development for individuals with intellectual disabilities, but also enhances social integration, improves communication skills, and promotes independent living, thereby improving quality of life.

Although it has been reported that sports contribute to the development of physical, cognitive, and social skills in individuals with disabilities, studies show that only a limited proportion of individuals with intellectual disabilities participate regularly in sports activities and encounter various barriers in their social participation processes (Obradović et al., 2021; Robinson et al., 2018). For example, Wang and colleagues' (2023) cross-sectional study reported that children and adolescents with intellectual disabilities have low participation in physical activity; this situation is attributed to limited opportunities, physical environmental barriers, and individual limitations. Similarly, Michalsen and colleagues (2024) found that factors hindering participation in sports and physical activity among adults with intellectual disabilities included transportation difficulties, lack of appropriate programs and support opportunities, and health-related limitations. These findings highlight that interventions aimed at increasing sports participation among individuals with intellectual disabilities must encompass not only physical infrastructure but also social and environmental support. Furthermore, it is emphasized that a societal structure that does not sufficiently support individuals with disabilities with an inclusive perspective exacerbates this situation, and that a lack of social awareness is a major factor that hinders access to sports activities for individuals with disabilities (DePauw & Gavron, 2005).



Awareness is defined in cognitive psychology and educational sciences as knowledge, perception, and sensitivity towards a widely relevant phenomenon. In other words, awareness encompasses an individual's level of knowledge about a specific subject, their recognition of the subject's effects, and the development of a conscious attitude towards it (Zimbardo et al., 2003). In this context, in order for individuals with mental disabilities to fully benefit from the gains provided by sports, it is critically important to improve physical conditions, increase social awareness, and strengthen psychosocial support. Therefore, in order to encourage and sustain participation in sports, it is of great importance to create a supportive social environment that increases the individual's motivation (Hansen et al., 2023). At this point, families, friends, coaches, and teachers bear significant responsibilities. However, to effectively address the challenges faced by individuals with disabilities, it is not sufficient to rely solely on individual support mechanisms; it is also essential to transform societal perspectives and ensure that the entire community adopts an inclusive and conscious attitude. Indeed, Bota and colleagues (2014) also emphasize the need to develop strategies and train human resources accordingly to achieve this transformation.

A study examining university students' attitudes toward the participation of individuals with intellectual disabilities in sports found that participants generally had a high level of awareness of the benefits of sports for individuals with intellectual disabilities, with special education students demonstrating higher awareness than students in other departments (İlhan & Esentürk, 2015). The study conducted by Çubukçu Okçu and Acet (2024) examined the awareness levels of students at different educational levels, namely middle school and high school, regarding the effects of sports on individuals with intellectual disabilities, and reported that high school students had higher awareness levels. These findings reveal that receiving education in the field of special education positively affects the awareness and attitudes of individuals with intellectual disabilities towards the effects of sports. Furthermore, they show that as educational levels progress, individuals' attitudes, knowledge levels, and perceptions toward individuals with special needs may vary.

In this regard, the study aims to determine the awareness levels of individuals at different educational levels regarding the effects of sports on individuals with intellectual disabilities, as well as the factors influencing this awareness. It is anticipated that the research findings will contribute to guiding social awareness activities, identifying potential strategies for educational policies, and expanding the limited existing literature on the subject.

## Material and Methods

### Research Model

The study was designed as a correlational research study to determine the awareness of middle school, high school, and university students regarding the effects of sports on individuals with intellectual disabilities. Correlational research involves models that determine whether there is a relationship between two or more variables (Erkuş, 2021).

### Research Sample

The sample for the study was selected from middle school students (35.9%, $n$ = 269), high school students (28.4%, $n$ = 213), and university students (35.7%, $n$ = 268) enrolled in the 2024–2025 academic year in Istanbul, using a readily available sample $n$ = 269), high school (28.4%, $n$ = 213), and university students (35.7%, $n$ = 268) enrolled in Istanbul during the 2024–2025 academic year. When determining the sample size, a power analysis was performed based on Cohen (2018), defining the effect size as medium, the power of the measurement tool as 0.80, and the margin of error as 0.05. The sample size was set at a lower limit of 231, and 750 volunteer students participated in the study. Of the participants, 54.3% were female and 45.7% were male. When the distribution of university students by department was examined, the highest participation was observed in the Department of Physiotherapy (19.8%), whereas the lowest participation was from the Department of Architecture (12.3%). The demographic characteristics of the participants are presented in Table 1.

**Table 1.**
*Demographic Findings of Participants*

| Variables | Categories | *n* | % |
|---|---|---|---|
| Gender | Women | 407 | 54.3 |
| | Men | 343 | 45.7 |
| Educational status | Middle school | 269 | 35.9 |
| | High school | 213 | 28.4 |
| | University | 268 | 35.7 |
| University departments | Sports sciences | 45 | 16.8 |
| | Dietetics | 34 | 12.7 |
| | Child development | 34 | 12.7 |
| | Engineering | 35 | 13.1 |
| | Architecture | 33 | 12.3 |
| | Physical therapy | 53 | 19.8 |
| | First aid and emergency care | 34 | 12.7 |

**Data Collection Tools**

***Awareness Scale for the Effects of Sports on Individuals with Intellectual Disabilities***

The scale developed by İlhan and Esentürk (2015) consists of 32 items and one subscale. The scale is a 5-point Likert scale ranging from strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5 points). Statements with negative meanings are reverse-scored. The lowest and highest values that can be obtained from the scale are 32 and 160 points, respectively. The 32–74 point range is defined as low awareness level, the 75–117 point range as medium awareness level, and the 118–160 point range as high awareness level. The Cronbach's $\alpha$ reliability value of the scale was calculated as 0.99. In the study, the Cronbach's $\alpha$ reliability value of the scale was calculated as 0.96. The scale was developed for university students. Therefore, Confirmatory Factor Analysis (CFA) was applied to check the model-data fit of the scale in middle school and high school students. When examining the fit indices for middle school students, the model was found to be consistent with the data. Accordingly, the scale was found to be applicable to middle school students (Normed Fit Index [NFI] = 0.90, Root Mean Square Error of Approximation [RMSEA] = 0.09, Comparative Fit Index [CFI] = 0.92, Goodness of Fit Index [GFI] = 0.92, Adjusted Goodness of Fit Index [AGFI] = 0.87, Standardized Root Mean Square Residual [SRMR] = 0.05).. Similarly, the fit indices obtained for high school students indicate that the model is consistent with the data. This finding demonstrates that the scale is also applicable to high school students (NFI = 0.93, RMSEA = 0.08, CFI = 0.95, GFI = 0.93, AGFI = 0.87, SRMR = 0.06). The analysis conducted on university students also determined that model-data fit was achieved. Therefore, it was concluded that the scale is applicable to university students (NFI = 0.90, RMSEA = 0.09, CFI = 0.93, GFI = 0.90, AGFI = 0.85, SRMR = 0.09). Sample items from the scale are provided below.

"Sports enable individuals with intellectual disabilities to make new friends."

"Sports negatively impact the mental development of individuals with intellectual disabilities."

"Sports boost the self-confidence of individuals with intellectual disabilities."

"Sports cause individuals with intellectual disabilities to waste time."

**Data Collection Process**

Research data was collected from students studying in İstanbul during the 2024–2025 academic year. The necessary administrative permissions were obtained from the relevant institutions before the data collection process began. Different data collection methods were chosen during the implementation process, taking into account the characteristics of the age groups. In this context, the measurement tool was administered face-to-face by the researcher in the classroom environment for middle school and high school students; data from university students was collected online via Google Forms. It is thought that this difference in data collection environments may have a limited methodological effect on participant responses. In particular, it should be noted that in face-to-face applications, the presence of the researcher may increase social desirability bias, while in online applications, participants may be more inclined to give independent responses. In the studies conducted with middle and high school students, informed consent was obtained from parents, all participants were informed about the purpose of the study, participation was based on voluntary consent, and participants were informed about the principles of confidentiality and anonymity.

**Data Analysis**

Before the data from the study were included in the analysis, missing and erroneous data were checked, and outliers were removed from the dataset. To test the normality assumption, the condition that the skewness and kurtosis coefficients be between −1 and +1 was examined holistically, along with the condition that the values obtained by dividing the kurtosis and skewness coefficients by their standard errors be between −1.96 and +1.96. After determining that the data showed a normal distribution and that all necessary assumptions for analysis were met, an independent samples *t*-test and a one-way ANOVA analysis were applied to the data. The SPSS 25.0 (IBM SPSS Corp.; Armonk, NY, USA) program was used for the descriptive statistics and analyses of the data. The Lisrel 8.7 program was used for CFA.

**Ethical Approval**

This study has been approved by the İstanbul Yeni Yüzyıl University Ethics Committee (Approval No: SBBEK-2024/13; Date: December 20, 2024). Written informed consent was obtained from the parents of all children participating in the study. The study was conducted on a voluntary basis throughout the study process, and participant confidentiality was maintained.



**Findings**

In this study, findings obtained through the Awareness Scale for the Effects of Sports on Individuals with Intellectual Disabilities (ASESIID) are presented in tables in this section.

When examining the average scores participants received from ASESIID according to the variables presented in Table 2, it was observed that male participants ($\bar{X} = 113.89$), middle school students ($\bar{X} = 117.15$), and high school students ($\bar{X} = 111.42$) had medium levels of awareness. Furthermore, in addition to the finding that university students had high levels of awareness in all departments, it was found that the lowest average score belonged to students in the Physical Therapy department ($\bar{X} = 118.00$), while the highest average score belonged to students in the Child Development department ($\bar{X} = 134.50$) (Table 2).

The results of the Independent Samples *t*-test for participants' average ASESIID scores according to the gender variable are presented in Table 3. The analysis results reveal that ASESIID scores show a significant difference according to gender ($p < .05$). It was determined that female participants' awareness scores ($\bar{X} = 124.27$) were higher than those of male participants ($\bar{X} = 113.89$) (Table 3).

Table 4 presents the results of the one-way ANOVA test regarding participants' awareness of the effects of sports on individuals with intellectual disabilities in relation to their educational status. According to the analysis findings, it was determined that awareness scores showed a significant difference according to educational level ($F(2747) = 22.78$, $p < .05$). According to the results of the Scheffe test, which was conducted to determine between which groups the difference in means occurred, it was found that university students' awareness levels were significantly higher than those of high school and middle school students ($p < .05$).

The results of the one-way ANOVA analysis for independent samples of university students' ASESIID scores according to the department

**Table 2.**
*Findings Regarding Participants' ASESIID Average Scores*

| Variables | Categories | $\bar{X}$ | ss | Min | Max |
|---|---|---|---|---|---|
| Gender | Women | 124.27 | 27.63 | 40.00 | 160.00 |
| | Men | 113.89 | 29.75 | 32.00 | 160.00 |
| Educational status | Middle school | 117.15 | 22.68 | 32.00 | 160.00 |
| | High school | 111.42 | 31.55 | 32.00 | 160.00 |
| | University | 128.35 | 30.44 | 40.00 | 160.00 |
| University departments | Sports sciences | 127.77 | 29.79 | 62.00 | 160.00 |
| | Dietetics | 129.47 | 27.74 | 63.00 | 160.00 |
| | Child development | 134.50 | 33.49 | 40.00 | 160.00 |
| | Engineering | 132.46 | 28.35 | 64.00 | 160.00 |
| | Architecture | 132.82 | 28.11 | 64.00 | 160.00 |
| | Physical therapy | 118.00 | 31.51 | 62.00 | 160.00 |
| | First aid and emergency care | 124.88 | 31.16 | 62.00 | 160.00 |

**Table 3.**
*Results of the Independent Samples T-Test According to the Gender Variable*

| Sub-dimension | Gender | *n* | $\bar{X}$ | S | SD | *t* | *p* |
|---|---|---|---|---|---|---|---|
| Awareness | Women | 407 | 124.27 | 27.63 | 748 | 4.917 | .00 |
| | Men | 343 | 113.89 | 29.75 | | | |

**Table 4.**
*Results of One-Way ANOVA Analysis for Independent Samples According to Educational Status Variable*

| Sub-dimension | Source of Variance | Sum of Squares | SD | Mean Square | *F* | *p* | Significant Differences |
|---|---|---|---|---|---|---|---|
| Awareness | Between groups | 36360.32 | 2 | 18180.16 | 22.78 | .00 | University > High school |
| | Within groups | 596262.75 | 747 | 798.21 | | | University > Middle school |
| | **Total** | 632623.07 | 749 | | | | |

**Table 5.**
*Results of One-Way ANOVA Analysis for Independent Samples According to the Department Variable of University Students*

| Sub-dimension | Source of Variance | Sum of Squares | SD | Mean Square | *F* | *p* |
|---|---|---|---|---|---|---|
| Awareness | Between groups | 8591.140 | 6 | 1431.857 | 1.572 | .156 |
| | Within groups | 237680.095 | 261 | 910.652 | | |
| | **Total** | 246271.235 | 267 | | | |

variable are presented in Table 5. According to the analysis results, there was no statistically significant difference between group means ($F_{(6261)} = 1.572$, $p > .05$).

## Discussion

Research highlights the supportive role of sports in the development processes of individuals with intellectual disabilities, while also showing that one of the main barriers limiting their participation in sports is society's insufficient awareness of their potential for success in sports and the importance of sports in their lives. This situation leads to the neglect of the sports-related needs of individuals with intellectual disabilities, emerging as an element that hinders or complicates their participation processes. In this regard, it is believed that the findings of this study, conducted to understand the awareness levels of individuals at different educational levels regarding the effects of sports on individuals with intellectual disabilities and to determine the factors affecting this situation, will contribute to the development of effective measures on the subject.

In this study, which examined the level of awareness regarding the effects of sports on individuals with intellectual disabilities in terms of various variables, it was determined that female students and university students had high levels of awareness, while male students and middle and high school students had moderate levels of awareness. A review of the relevant literature reveals differing findings regarding the gender variable. A study supporting the findings revealed that female participants had higher levels of awareness in a study conducted on sports management candidates (Altınışık et al., 2021). Similarly, another study examining the views of Faculty of Sports Sciences students on the social, physical, mental, and psychological development of individuals with intellectual disabilities

through sports reported results in favor of female students (Kırtepe, 2017).

On the other hand, there are also studies that find the effect of gender on awareness levels to be limited or that do not reveal any significant differences. For example, in a study examining the relationship between attitudes toward sports activities for individuals with intellectual disabilities and awareness of the effects of sports, no statistically significant difference was found based on gender, but it was determined that the average scores of female participants were higher than those of males (Yılmaz et al., 2024). Furthermore, a study conducted with medical students reported that prospective doctors generally had a high level of awareness, but no significant difference was found between male and female participants (Kemeç et al., 2018). Similarly, another study involving physical education and sports teacher candidates reported that the gender variable did not create a significant difference in the level of awareness regarding the effects of sports on individuals with intellectual disabilities (Yıldırım & Yüksel, 2022). Therefore, studies in the literature present different results regarding the effects of the gender factor on the level of awareness on the subject, suggesting that more comprehensive studies on the relevant variable are needed to determine the reasons for these inconsistent results.

This study presents an example of research that addresses awareness levels at the middle school, high school, and university levels and evaluates the differences between educational levels from a holistic perspective within the same study, offering a different perspective from other studies in the literature that address the subject. A review of existing research reveals that studies typically focus on a single occupational group or, at most, two different educational levels. However, existing theories indicate that individuals' awareness levels and attitudes may undergo significant changes throughout developmental processes and educational levels. For example, Piaget (1952) argues that while children struggle to understand abstract concepts during their cognitive development process, their awareness of social norms increases as they grow older. Vygotsky's sociocultural theory, on the other hand, suggests that individuals learn through social interactions (Vygotsky, 1978), emphasizing that different environmental interactions at different levels of education are a decisive factor in attitude development. These theories suggest that as individuals age and their educational level increases, their awareness levels and attitudes may differ and change depending on cognitive development, social interactions, and environmental factors.

In this regard, the study examining the differences in awareness levels regarding the effects of sports on individuals with intellectual disabilities across three different educational levels revealed that university students' awareness levels were significantly higher than those of high school and middle school students, but there was no statistically significant difference between middle school and high school students. However, the fact that middle school students' average scores are quite close to those of high school students can be explained by this age group's developmental characteristics, which make them more prone to social sensitivity, more open to cognitive and emotional learning, and more inclined to be guided toward social issues by their teachers and families. Indeed, it has been suggested that middle school students may have higher levels of empathy and social awareness than high school students, and that this difference may change in later stages of adolescence as individuals become more independent (Carlo et al., 2015).

The variability in awareness levels across different educational levels and the increase in awareness as the level of education rises raises the question of how this awareness can be developed. Indeed, the literature, which draws attention to experience- and contact-based approaches, suggests that inclusive and interaction-based practices can be effective in this process. For example, Albaum and colleagues (2021) found that individuals participating in integrated sports activities had more positive attitudes toward individuals with intellectual disabilities and emphasized that sports offer an area of interaction that can influence not only physical but also social-cognitive attitudes. Similarly, Luarte-Rocha (2023) reports that school-based awareness programs significantly improve attitudes and awareness toward individuals with disabilities in student communities. Similarly, at the university level, it is reported that teacher candidates' awareness and attitudes toward the effects of sports on individuals with intellectual disabilities are strengthened through direct interaction and practical experience (Aydemir & Yarımkaya, 2024). These findings reveal that the educational environment plays a decisive role in shaping values, perceptions, and attitudes, and suggest that university students' higher levels of awareness may be related to increased social contact, experience of an inclusive environment, and cognitive maturity.



On the other hand, in a similar study by Çubukçu Okçu and Acet (2024) involving middle and high school students, it was reported that awareness levels regarding the effects of sports on individuals with intellectual disabilities favored high school students, a finding that differs from the results of the current study. Another study reported that the age variable caused a significant difference in the level of awareness of the effects of sports on individuals with intellectual disabilities, with individuals over the age of 24 having a higher level of awareness than those between the ages of 18–20 and 21–23 (Yıldırım & Yüksel, 2022).

Another finding of this study is that there is no significant difference in awareness levels among university students based on their departments of study. Although no other study addressing this variable was found, a study was identified that examined the awareness levels of special education and subject teachers regarding physical education and sports activities for individuals with special educational needs and addressed departmental differences in the context of the teaching profession. In the relevant study, a significant relationship was found in terms of the participants' field of study, and it was reported that teachers who graduated from fields other than special education had higher levels of awareness compared to those who graduated from special education (Baş et al., 2021). This finding reported by the researchers raises an important question about whether special education teachers, who are responsible for providing guidance and direction in meeting the educational needs of children with special needs, may be inadequate in encouraging children's participation in physical education and sports activities.

## Conclusion and Recommendations

This study shows that the level of awareness regarding the effects of sports on individuals with intellectual disabilities differs significantly according to gender and education level. The findings reveal that awareness is higher among female participants and tends to increase with higher levels of education. The fact that university students have higher levels of awareness than middle and high school students suggests that the academic and social gains acquired during

the education process may support the level of awareness in this area. In contrast, the absence of a significant difference between the departments in which university students study indicates that awareness can be shaped within a broader social consciousness rather than being specific to a particular discipline. Overall, the findings reveal that awareness exhibits a multidimensional structure and can develop in relation to educational experiences. In this context, it is considered that supporting awareness from an early age with structured educational content and inclusive practices could create a meaningful foundation for the social participation of individuals with intellectual disabilities through sports.

- Considering the inconsistent findings in the literature regarding the role of gender on awareness levels, it is recommended that more detailed and theoretical research be conducted on this subject.
- It is recommended that academic studies addressing different developmental stages and educational levels simultaneously be increased.
- The literature revealing that middle school, high school, and university students have different levels of awareness suggests the need to design awareness-raising programs specific to each level of education.
- It is recommended that seminars, workshops, and awareness-raising activities be organized regularly in schools at every level of education to develop a deep understanding among school administrators, teachers, and students regarding the sports-related needs of individuals with intellectual disabilities.



**Data Availability Statement:** The data that support the findings of this study are available on request from the corresponding author.

**Artificial Intelligence Usage Statement:** This study used DeepL during the preparation of the manuscript for language translation and grammatical editing purposes.

**Ethics Committee Approval:** Ethical committee approval was received from the Ethics Committee of University of İstanbul Yeni Yüzyıl University (Approval No: SBBEK-2024/13; Date: December 20, 2024).

**Informed Consent:** Written informed consent was obtained from the legal guardians of the middle and high school students, and voluntary consent was obtained from the university students who participated in this study.

**Peer-review:** Externally peer-reviewed.

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## References

Aitchison, B., Rushton, A. B., Martin, P., Barr, M., Soundy, A., & Heneghan, N. R. (2022). The experiences and perceived health benefits of individuals with a disability participating in sport: A systematic review and narrative synthesis. *Disability and Health Journal*, *15*(1), 101164. [CrossRef]

Albaum, C., Mills, A., Morin, D., & Weiss, J. A. (2021). Attitudes toward people with intellectual disability associated with integrated sport participation. *Adapted Physical Activity Quarterly*, *39*(1), 86–108. [CrossRef]

Altınışık, Ü., İlhan, E. L., & Kurtipek, S. (2021). Zihinsel engelli bireylerde sporun etkilerine yönelik farkındalık: Spor yöneticisi adayları üzerine bir araştırma. *CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi*, *16*(2), 79–90. [CrossRef]

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed). American Psychiatric Association. [CrossRef]

Aslan, S., Tonak, H. A., Kavlak, E., & Ergin, A. (2025). The effect of strengthening and aerobic exercises on balance and functional independence levels in students with intellectual disabilities. *International Journal of Developmental Disabilities*, *71*(1), 80–86. [CrossRef]

Aydemir, U., & Yarımkaya, E. (2024). Awareness and attitudes of physıcal educatıon teacher candıdates towards the effects of sports on the indıvıduals wıth ıntellectual dısabılıtıes: An empirical study. *Beden Eğitimi ve Spor Bilimleri Dergisi*, *18*(3), 553–566. [CrossRef]

Baş, M., Ün, Y., Özsandikçi, K., & Terzioğlu, E. S. (2021). Investigation of special education and branch teachers' attitudes towards physical education and sports activities of individuals with special needs. *Pakistan Journal of Medical and Health Sciences*, *15*(10), 3441–3444. [CrossRef]

Bota, A., Teodorescu, S., & Şerbănoiu, S. (2014). Unified Sports–a social inclusion factor in school communities for young people with intellectual disabilities. *Procedia—Social and Behavioral Sciences*, *117*, 21–26. [CrossRef]

Carlo, G., Padilla-Walker, L. M., & Nielson, M. G. (2015). Longitudinal bidirectional relations between adolescents' sympathy and prosocial behavior. *Developmental Psychology*, *51*(12), 1771–1777. [CrossRef]

Çubukçu Okçu, Ç., & Acet, M. (2024). Ortaokul ve lise Öğrencilerinin zihinsel engelli bireylerde sporun etkilerine yönelik farkındalık Düzeyinin İncelenmesi. *Socıal Scıences Studıes Journal (Sssjournal)*, *5*(47), 5865–5871. [CrossRef]

DePauw, K. P., & Gavron, S. J. (2005). *Disability sport*. Human Kinetics Publishers. Incorporated. [CrossRef]

Erkuş, A. (2021). *Davranış bilimleri için bilimsel araştırma süreci* (7. Baskı). Ankara: Seçkin Yayıncılık.

Hansen, E., Nordén, H., & Ohlsson, M. L. (2023). Adolescents with intellectual disability (ID) and their perceptions of, and motivation for, physical activity and organized sports. *Sport, Education and Society*, *28*(1), 59–72. [CrossRef]

İlhan, E. L., & Esentürk, O. K. (2015). Zihinsel engelli bireylerde sporun etkilerine yönelik farkındalık ölçeği (ZEBSEYFÖ) geliştirme çalışması. *CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi*, *9*(1), 19–36.

Jacinto, M., Oliveira, R., Brito, J. P., Martins, A. D., Matos, R., & Ferreira, J. P. (2021). Prescription and effects of strength training in individuals with intellectual disability—A systematic review. *Sports*, *9*(9), 125. [CrossRef]

Kemeç, D. G., Tekkurşun Demir, G. T., & Koç, S. (2018). Doktor adaylarının zihinsel yetersizliği olan bireylerde sporun etkilerine yönelik farkındalıkları. *Gaziantep Üniversitesi Spor Bilimleri Dergisi*, *3*(4), 153–168. [CrossRef]

Kırtepe, A. (2017). The Analysıs of the awareness stage of students that study in the faculty of sport Scıences toward the effect of sport on Indıvıduals wıth mental Dısabılıty sample of Fırat Unıversity. *Online Journal of Recreation and Sports*, *6*(1), 32–39.

Luarte-Rocha, C., López-Casanova, L., Navarro-Gajardo, V., Pleticosic, Y., Sagredo-Aravena, R., Castelli Correia de Campos, L. F., & Campos Campos, K. I. (2023). Awareness programs towards people with disabilities in the school context, physical education and health. A systematic review of the last 10 years. *Retos*, *50*, 1281–1288. [CrossRef]

Maicas-Pérez, L., Hernández-Lougedo, J., Maté-Muñoz, J. L., Villagra-Astudillo, A., García-Fernández, P., Suárez-Villadat, B., & Jiménez-Rojo, B. (2024). Effect of physical activity interventions on health parameters in children and adolescents with intellectual disabilities: A systematic review. *Healthcare*, *12*(23), 2434. [CrossRef]

Michalsen, H., Henriksen, A., Hartvigtsen, G., Olsen, M. I., Pedersen, E. R., Søndenaa, E., Jahnsen, R. B., & Anke, A., & Anke, A. (2024). Barriers to physical activity participation for adults with intellectual disability: A cross-sectional study. *Journal of Applied Research in Intellectual Disabilities*, *37*(4), e13242. [CrossRef]

Obradović, S., Nikodelis, T., & Stojković, M. (2021). Significance of sport activities for persons with disabilities. *Godišnjak za Psihologiju*, *18*(1), 27–40. [CrossRef]

Piaget, J. (1952). *The origins of intelligence in children*. Newyork: International University Press. [CrossRef]

Robinson, S., Fraser-Thomas, J. L., Balogh, R., Lunsky, Y., & Weiss, J. A. (2018). Individual and contextual correlates of frequently involved Special Olympics athletes. *American Journal on Intellectual and Developmental Disabilities*, *123*(2), 164–175. [CrossRef]

Shields, N., & Synnot, A. (2016). Perceived barriers and facilitators to participation in physical activity for children with disability: A qualitative study. *BMC Pediatrics*, *16*, 9. [CrossRef]

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*, *86*. USA: Harvard university press.

Wang, Y., Jin, Q. M., Wang, C., He, G., Li, D. S., & Ma, K. Y. (2023). Barriers to physical activity among children and adolescents with intellectual disabilities: A cross-sectional study. *Biomedical and Environmental Sciences*, *36*(12), 1177–1182. [CrossRef]

Yıldırım, A., & Yüksel, M. F. (2022). Beden eğitimi ve spor öğretmeni adaylarının zihinsel engelli bireylerde sporun etkilerine yönelik tutum ve farkındalık düzeylerinin belirlenmesi. *Türk Spor Bilimleri Dergisi*, *5*(2), 115–126. [CrossRef]

Yılmaz, S. H., Yılmaz, B. H., & Erer, H. (2024). Zihinsel engelli bireylerde sporun etkilerine yönelik tutum ve farkındalık: Spor bilimleri fakültesi öğrencileri üzerine bir araştırma. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *33*(1), 160–173. [CrossRef]

Youngson, L., Foster, C., & Lambert, J. (2023). The physical and mental health benefits of lifestyle sports for disabled people: A scoping review. *International Journal of Disabilities Sports and Health Sciences*, *6*(1), 60–81. [CrossRef]

Zimbardo, P. G., Johnson, R. L., McCann, V., & Carter, C. (2003). *Psychology: Core concepts* (p. 647). Boston: Allyn and Bacon.