

Araştırma Makalesi

BEDEN EĞİTİMİ ÖĞRETMENİ ADAYLARININ ZİHİNSEL YETERSİZLİĞİ OLAN BİREYLERDE SPORUN ETKİLERİNE YÖNELİK FARKINDALIK VE TUTUMLARI: AMPİRİK BİR ÇALIŞMA

AWARENESS AND ATTITUDES OF PHYSICAL EDUCATION TEACHER CANDIDATES TOWARDS THE EFFECTS OF SPORTS ON THE INDIVIDUALS WITH INTELLECTUAL DISABILITIES: AN EMPIRICAL STUDY

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Beden Eğitimi Öğretmeni Adaylarının Zihinsel Yetersizliği Olan Bireylerde Sporun Etkilerine Yönelik Farkındalık ve Tutumları: Ampirik Bir Çalışma

ÖZ

Bu araştırmada, zihinsel yetersizliği olan bireylerle spor etkinliklerine katılan beden eğitimi öğretmeni adaylarının sporun etkilerine yönelik farkındalık ve tutumlarında herhangi bir değişim olup olmadığının incelenmesi amaçlanmıştır. 28 beden eğitimi öğretmeni adayının katıldığı araştırma deneysel bir modelde tasarlanmıştır. Beden eğitimi öğretmeni adayları rastgele olarak bir uygulama grubu (n: 14) ve bir kontrol grubuna (n: 14) atanmıştır. Uygulama grubundaki beden eğitimi öğretmeni adayları, 8-12 yaş aralığındaki yedi zihinsel yetersizliği olan birey ile iki hafta boyunca haftada dört gün, günde 40 dakika fiziksel aktiviteler gerçekleştirmiştir. Fiziksel aktiviteler öncesinde beden eğitimi öğretmeni adaylarına farkındalık oluşturma, uygulama öncesinde yapılacaklar ve uygulama sırasında yapılacaklar olmak üzere üç aşamalı gönüllülük eğitimleri verilmiştir: Araştırma verileri; Zihinsel Yetersizliği Olan Bireylerde Sporun Etkilerine Yönelik Farkındalık Ölçeği ve Zihinsel Yetersizliği Olan Bireylerde Sporun Etkilerine Yönelik Tutum Ölçeği aracılığıyla toplanmıştır. Veriler, Tekrarlı Ölçümler ANOVA testi kullanılarak analiz edilmiştir. Bulgulara göre, grup * ölçüm ortak etkisinin beden eğitimi öğretmeni adaylarının sporun etkilerine yönelik farkındalık ve tutum düzeyleri üzerinde anlamlı olduğu belirlenmiştir. Uygulama grubundaki beden eğitimi öğretmeni adaylarının son test puanları, ön test puanlarından anlamlı derecede yüksek bulunmuştur. Sonuç olarak, zihinsel yetersizliği olan bireylerle spor etkinliklerine katılımın beden eğitimi öğretmeni adaylarının sporun etkilerine yönelik farkındalık ve tutumları üzerinde olumlu yönde bir etki oluşturduğu izlenimi elde edilmiştir. Bu sonuç doğrultusunda, hizmet öncesi eğitim sürecinde uygulamalı bir etkinlik olarak beden eğitimi öğretmeni adaylarının zihinsel yetersizliği olan bireylerle bir arada katılacakları spor etkinliklerinin düzenlenmesi önerilmektedir. Bu sayede, sporun etkilerine yönelik olumlu yönde farkındalık ve tutum sahibi olarak yetişen geleceğin beden eğitimi öğretmenlerinin, zihinsel yetersizliği olan bireylerin daha etkin bir şekilde spor etkinliklerine katılımına katkı sunacağı düşünülmektedir.

Anahtar Kelimeler: Beden eğitimi öğretmeni adayı, zihinsel yetersizlik, farkındalık, tutum

Awareness and Attitudes of Physical Education Teacher Candidates Towards the Effects of Sports on the Individuals with Intellectual Disabilities: An Empirical Study

ABSTRACT

This research aims to investigate the changes in the awareness and attitudes towards the effects of sports of physical education teacher candidates who participate in sports activities with individuals with intellectual disabilities. 28 physical education teacher candidates participated in the research designed in an experimental model. physical education teacher candidates were randomly assigned to an application group (n: 14) and a control group (n: 14). Physical education teacher candidates in the application group performed physical activities for 40 minutes, four days a week, for two weeks, seven individuals with intellectual disabilities between the ages of 8-12. Before physical activities, volunteer training consisting of three stages was given to physical education teacher candidates: awareness raising, what to do before the practice and what to do during the practice. Study data; The Personal Information Form was collected through the Awareness Scale for the Effects of Sports on Individuals with Intellectual Disabilities and the Attitude Scale for the Effects of Sports on Individuals with Intellectual Disabilities. Repeated Measures ANOVA test was used to analyze the data. According to the findings, it was determined that the group * measurement joint effect was significant on the awareness and attitude levels of physical education teacher candidates towards the effects of sports. The post-test scores of physical education teacher candidates in the application group were significantly higher than the pre-test scores. As a result, it was obtained the impression that participation in sports activities with individuals with intellectual disabilities had a positive effect on the awareness and attitudes of physical education teacher candidates towards the effects of sports. In line with this result, it is recommended to organize sports activities in which physical education teacher candidates will participate together with individuals with intellectual disabilities in in-class and extracurricular practices during the pre-service education process. It is thought that future physical education teachers, who are trained with positive awareness and attitudes towards the effects of sports, will contribute to the more effective participation of individuals with intellectual disabilities in sports activities.

Keywords: Physical education teacher candidate, intellectual disability, awareness, attitude

INTRODUCTION

Intellectual disability is defined as general intellectual functions being below normal limits and a deficiency in two or more adaptive behaviors. In addition to the difficulties they experience in these adaptive behaviors, individuals with intellectual disabilities also experience a number of cognitive difficulties¹. These cognitive difficulties negatively affect the developmental areas of individuals with intellectual disabilities, especially social development², and limit their acceptance by their environment and peers³. Participation in sports activities is an important support mechanism used to support the developmental areas of individuals with intellectual disabilities⁴. Sport activities have a positive effect on the motor development, body health and physical development of these individuals⁵. Thanks to these activities, individuals with intellectual disabilities contribute to their self-efficacy and self-esteem levels⁶. Moreover, positive changes are observed in the quality of life⁷, behavioral problems of individuals with intellectual disabilities⁸ and stress levels⁹. Additionally, sports activities make it easier for individuals with intellectual disabilities to make friends and gain social skills^{10,11}. Although these activities contribute to the development of individuals with intellectual disabilities, studies suggest that individuals with intellectual disabilities participate in sport activities at a low level¹². It is stated that the reasons for this situation include the negative awareness and attitudes of physical education teachers¹³⁻¹⁵. In order to ensure the participation of these individuals in sports activities, teachers need to accept individuals with intellectual disabilities and have attitudes of the effects of these activities in addition to their field knowledge and professional experience¹⁶. A recent study¹⁴ examining the attitudes and opinions of physical education teachers in our country regarding students with special needs, including those with intellectual disabilities, revealed that physical education teachers' lack of knowledge about students with special needs, schools and classrooms not being suitable for physically inclusive physical education, lack of materials. and that he has negative attitudes and views towards inclusive physical education and sports due to crowded classes.

Teachers' awareness and attitudes affect their level of support for individuals with disabilities¹⁷. Individuals with disabilities can easily participate in sports if they are adequately supported by teachers¹⁸. For this reason, in order to facilitate the participation of individuals with intellectual disabilities in sports activities, it is considered important to conduct studies that will contribute to physical education teachers realizing the positive effects of sports activities on individuals with intellectual disabilities. It is suggested that participation in practical experiences positively contributes to physical education teachers and teacher candidates developing knowledge and skills for teaching individuals with special needs, including intellectual disabilities¹⁹. It is possible to come across various studies in the literature examining the awareness and attitudes of physical education teacher candidates towards the effects of sports activities on individuals with intellectual disabilities. However, it has been observed that the majority of these studies address awareness and attitudes with a descriptive understanding in terms of various variables (age, gender, course, teaching experience, presence of a special needs individual in the family, etc.)¹⁹⁻²⁸.

Only four studies have been found in the literature that aim to improve the awareness and attitudes of physical education teacher candidates towards the effects of sports activities on individuals with intellectual disabilities. Sullivan and Masters-Glidden (2014)²⁹, it was determined that 8-week Special Olympics activities had a positive

effect on volunteers' attitudes towards individuals with disabilities. Li and Wang (2013)³⁰ stated that the Special Olympic Games were effective in volunteers developing positive attitudes towards individuals with disabilities. McKay et al. (2015)³¹, it has been suggested that participation in "Paralympic School Day" events positively increases the attitudes of typically developing individuals towards individuals with disabilities. Hodge et al. (2003)¹⁹ reported that physical education students who participated in a 9-week physical education program with students with special needs, including those with intellectual disabilities, exhibited a more positive attitude towards teaching and interacting with students with special needs. In the current research, this gap in the literature was taken into consideration and emphasis was placed on organizing activities that could improve the awareness and attitudes. Unlike previous studies, the current research included volunteer training for physical education teacher candidates before the activities to improve their skills in applying physical activity to individuals with intellectual disabilities. In the light of this information, the current research aimed to examine whether there is any change in the awareness and attitudes of physical education teacher candidates who participate in sports activities with individuals with intellectual disabilities towards the effects of sports.

- Do the awareness levels of physical education teacher candidates in the application and control groups regarding the effects of sports differ significantly between before and after sports activities?
- Do the attitude levels of physical education teacher candidates in the application and control groups towards the effects of sports differ significantly between before and after sports activities?

It is thought that the results obtained as a result of the research and the research process can guide educators and experts who aim to improve the awareness and attitudes of physical education teacher candidates towards the effects of sports on individuals with intellectual disabilities and contribute to the relevant literature.

MATERIAL AND METHODS

Study Design

The research used an experimental model (Table 1). In this model with a pretest-posttest control group, an independent variable is applied to a group. Measurements are made both before the application (pretest) and after the application (posttest) and it is analyzed whether there is a difference between the measurements obtained³². The dependent variable of the current study is physical education teachers' awareness and attitudes towards the effects of sports on individuals with intellectual disabilities. The independent variable is the sports activities in which physical education teacher candidates and individuals with intellectual disabilities participate together.

Table 1. Design of the Study

Group	Volunteer Trainings	Pre-test	Sports Activities	Post-test
Application	Volunteer training consisting of three sessions for one week was organized for 14 volunteer physical education teacher candidates.	Awareness and Attitudes Scales	(Two weeks)	Awareness and Attitudes Scales
Control	-	-	-	-

As seen in Table 1, in the current study, an application group and a control group were included in accordance with the pretest-posttest control group experimental model. Before the physical education and sports activities, volunteer trainings consisting of three sessions were organized for volunteer physical education teacher candidates for one week. Within the scope of volunteer training, physical education teacher candidates were given theoretical and practical training on awareness, preparations before physical activity implementation, and what to do during physical activity implementation. After the completion of the volunteer training, pre-test data were obtained. Then, in the application group, physical education teacher candidates participated in physical education and sports activities with individuals with intellectual disabilities for 40 minutes, four days a week, for two weeks. After physical education and sports activities, post-test data were collected.

Participants

28 physical education teacher candidates studying at Bayburt University were included in the research (Table 2). Participants were randomly divided into an application group (n: 14) and a control group (n: 14). Participants in the application group engaged in sports activities with seven individuals with intellectual disabilities between the ages of 8-12 for two weeks.

Table 2. Participants' Demographic Characteristics

Variables	Group	
	Application (n: 14)	Control (n: 14)
Gender	Male	6 (42.9 %)
	Female	8 (57.1 %)
Age	18-20	7 (50.0 %)
	21-23	4 (28.6 %)
	24-26	3 (21.4 %)
Grade	1	6 (42.9 %)
	2	3 (21.4 %)
	3	4 (28.6 %)
	4	1 (7.1 %)
Perceived Income	Low	5 (35.7 %)
	Moderate	7 (50.0 %)
	High	2 (14.3 %)

As seen in Table 2, 6 of the physical education teacher candidates in the application group were male and 8 were female, while 5 of the physical education teacher candidates in the control group were male and 9 were female. In terms of grade, 4 of the physical education teacher candidates in the application group were first graders, 5 of them were 2nd graders, 3 of them were 3rd graders, and 2 of them were 4th graders, while 6 of the physical education teacher candidates in the control group were 1st graders, 3 of them were 2nd graders, 4 of them are 3rd graders, and 1 of them is 4th grader. In terms of perceived income status, 1 of the physical education teacher candidates in the application group is at low income level and 13 of them are at medium level, while 5 of the physical education teacher candidates in the control group are at low income level, 7 of them are at medium level and 2 of them were found to have high income levels.

Volunteer Trainings

Volunteering training was given to 7 individuals with intellectual disabilities between the ages of 8-12 and 14 physical education teacher candidates who participated in

sports activities. In the preparation of volunteer trainings, studies in the literature were first examined^{33,34}. Volunteer trainings finalized in line with expert opinions and suggestions; It consists of subheadings: awareness, preparations before the sports event and things to do during the sports event. The training included not only theoretical processes but also practical processes. Before the activities, physical education teacher candidates took on the roles of child and instructor and mutually demonstrated the skills they acquired during the training.

Sports Activities

Seven individuals with intellectual disabilities and 14 physical education teacher candidates between the ages of 8-12 participated in sports activities for 40 minutes each, four days a week for two weeks. In the process of preparing the sports activities in question, previous studies in the literature on sports activities in individuals with intellectual disabilities were examined^{11,13}. In line with these studies, sports activities have been created in which individuals with intellectual disabilities and teacher candidates can participate together. As general content in the program; warm-up and cool-down activities, educational games, sporty tracks, functional exercises, branch-specific activities, dance activities, movement training and cooling activities were included.

Ethical Considerations

Approval of Bayburt University Ethics Committee was received for this research with the reference number (ACP-2024-195/7).

Data Collection Tools

Data were obtained with two tools. Detailed information about data collection tools is presented under the following headings.

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

The scale developed by İlhan and Esentürk (2015)³⁵ consists of a single dimension with 32 items as a result of explanatory factor analysis. Respondents can value each item between 1 and 5. In the data collection tool designed as a 5-point Likert-type scale, the items were rated as "Strongly Agree (5 points), Agree (4 points), Undecided (3 points), Disagree (2) and Strongly Disagree (1 point)". However, items with a negative meaning (items 4, 6, 10, 16, 22, 25, 29) were reverse scored. The lowest and highest values that can be obtained from the 32-item scale are 32 and 160 points, respectively. The range of 32 - 74 points is classified as low level of awareness, the range of 75 - 117 points is classified as medium level of awareness, and the range of 118 - 160 points is classified as high level of awareness. In order to provide evidence for the validity of the measurement tool, content validity, face validity and construct validity were applied. As a result of the exploratory analysis applied for construct validity, it was determined that the scale consisted of 32 items and a single dimension. The variance explained by a single dimension is 75.083%. Cronbach's alpha reliability coefficient for the entire scale is 0.989. Within the scope of the validity study of the scale, confirmatory factor analysis was performed and the structure revealed by exploratory factor analysis was confirmed. In the current study, the Cronbach Alpha internal consistency value for the overall scale was found to be .91.

Attitudes Scale for the Effects of Sports on Individuals with Intellectual Disabilities

The scale developed by İlhan et al. (2016)³⁶ is a 5-point Likert type and consists of 28 items. The lowest and highest scores that can be obtained are 28-140, respectively. High scores are interpreted as positive attitudes of the respondents, and low scores are interpreted as negative attitudes of the respondents. The items (10,15,20,25,32,35,38) in the "Negative Attitudes Towards Sporting Activities" sub-dimension of the measurement tool are analyzed by reverse scoring. The options for the items are listed as "Totally Agree", "Agree", "Undecided", "I Disagree", "Strongly Disagree". The reliability of the measurement tool was examined using Cronbach Alpha internal consistency coefficient and test-retest techniques. Cronbach Alpha reliability coefficient was found to be 0.96 for the overall scale. It was found to be 0.971 in the "Positive Attitude Towards Sporting Activities" sub-dimension of the scale, and 0.822 in the "Negative Attitudes Towards Sporting Activities" sub-dimension. The findings resulting from the Reliability Analysis showed that the overall scale and its sub-dimensions were highly reliable. In addition, while the correlation coefficient between the test-retest scores calculated for the overall scale in order to provide evidence of the reliability of the measurement tool was found to be 0.89, it was 0.93 and 0 in the "Positive Attitude Towards Sporting Activities" and "Negative Attitudes Towards Sporting Activities" sub-dimensions, respectively. It was calculated as 91. The findings obtained for the test-retest technique can be expressed as the measurement tool provides consistent measurements. Since the total scores that can be obtained from the scale were taken into account in this study, the Cronbach Alpha internal consistency value for the overall scale was calculated and found to be .90.

Data Analysis

The data were analyzed using the SPSS 26. In data analysis, firstly the normality of the data was examined. Skewness and Kurtosis values, and Shapiro Wilk test were used in the normality evaluation (Table 3). Since the Shapiro Wilk test and Skewness-Kurtosis values revealed that the data showed normal distribution, it was seen that the necessary assumptions for the use of repeated measures ANOVA test were met in comparing the awareness and attitude scores of teacher candidates.

Table 3. Shapiro-Wilk Test Results and Skewness-Kurtosis Values

Scales	Group	Measurement	W	sd	p	Skewness	Kurtosis
Awareness	Application	Pre	0.909	14	0.150	0.702	-0.612
		Post	0.863	14	0.054	-0.972	-0.305
	Control	Pre	0.925	14	0.256	-0.688	-0.596
		Post	0.908	14	0.148	0.144	-1.286
Attitude	Application	Pre	0.941	14	0.434	0.597	1.154
		Post	0.934	14	0.352	-0.113	-1.248
	Control	Pre	0.867	14	0.058	1.186	1.179
		Post	0.861	14	0.060	1.425	1.474

As seen in Table 3, the Skewness-Kurtosis and Shapiro Wilk test values revealed that the data was in accordance with normal distribution ($p > 0.05$, $+1.5 / -1.5$).

RESULTS

In this section, the findings regarding the questions sought to be answered within the scope of the study are presented. Do the awareness levels of physical education teacher candidates in the application and control groups regarding the effects of sports differ significantly between before and after sports activities? The findings obtained under this problem statement are shown in Table 4.

Table 4. Repeated Measures ANOVA Results on Awareness Scores of Physical Education Teacher Candidates.

Source	Sum of Squares	Sd	Mean of Squares	F	p	n ²
Between Groups						
Group (Application/control)	11286.161	1	11286.161	51.860	0.000*	0.666
Error	5658.321	26	217.628			
Within Groups						
Measurement (Pre/Post)	7661.161	1	7661.161	33.375	0.000*	0.562
Group* Measurement	5945.161	1	5945.161	25.900	0.000*	0.499
Error	5968.179	26	229.545			

*p<0.05

When Table 4 was examined, there was a significant difference in terms of group effect between the average scores obtained from awareness scale of physical education teacher candidates in the application and control groups, without distinguishing between pretest and posttest scores ($F_{(1, 26)} = 51.860$; $p < 0.05$). Likewise, it was revealed that there was a significant difference in terms of measurement effect between the averages of pre-test and post-test scores obtained from awareness scale of physical education teacher candidates in the application and control groups, regardless of group ($F_{(1, 26)} = 33.375$; $p < 0.05$). However, the joint effect of group and measurement was also found to be significant ($F_{(1, 26)} = 25.900$; $p < 0.05$). This finding showed that the scores obtained from awareness scale in the pre-test and post-test measurements of physical education teacher candidates in the application and control groups differed. Corrected Bonferroni values were used to examine the source of the difference in the awareness scores of physical education teacher candidates in the application and control groups over time (Table 5).

Table 5. Corrected Bonferroni Values for Awareness Scores of Physical Education Teacher Candidates

Group	Measurement		Difference	p
Application	Pre-test	Pre-test	-44.000	0.000*
	Post-test	Post-test	44.000	
Control	Pre-test	Pre-test	-2.786	0.485
	Post-test	Post-test	2.786	

*p<0.05

As seen in Table 5, there was a significant increase in the post-test scores of the physical education teacher candidates in the application group compared to the pre-test scores (corrected Bonferroni= $p < 0.05$, Difference = +44.000). This not case in the control group (corrected Bonferroni= $p > 0.05$, Difference= +2.786). In order to make sense of the corrected Bonferroni values, the interaction graph containing the findings regarding the awareness level of physical education teacher candidates in the application and control groups is presented in Figure 1.

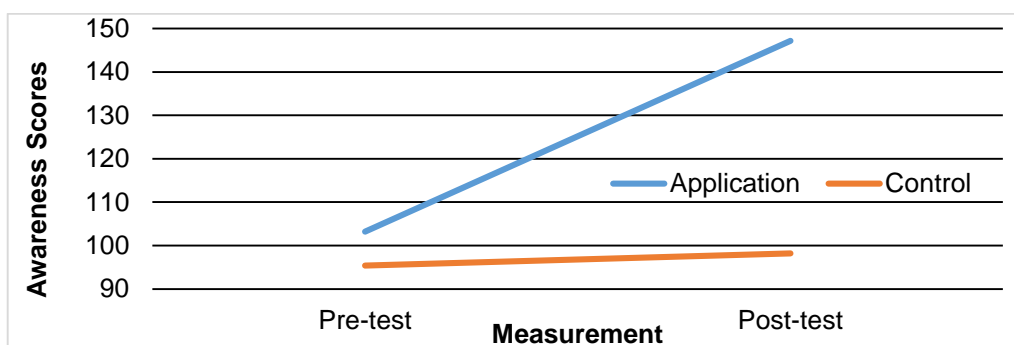


Figure 1. Graph of Average Scores Regarding the Awareness Level of Physical Education Teacher Candidates

When Figure 1 was examined, there was a significant increase between the pre-test and post-test awareness scores of the physical education teacher candidates in the application group. This not case in the control group. When the findings obtained from the Repeated Measures ANOVA test and the interaction graph were evaluated as a whole within the scope of the study, it was gained the impression that 2 weeks adapted physical activities had a positive and significant effect on the awareness level of physical education teacher candidates in the application group. These findings showed that there was a positive change in the awareness of physical education teacher candidates who participated in physical activities with individuals with intellectual disabilities regarding the effects of sports.

Table 6. Repeated Measures ANOVA Results on Attitudes Scores of Physical Education Teacher Candidates

Source	Sum of Squares	Sd	Mean of Squares	F	p	η^2
Between Groups						
Group (Application/control)	8232.875	1	8232.875	27.771	0.000*	0.516
Error	7707.750	26	296.452			
Within Groups						
Measurement (Pre/Post)	4063.018	1	4063.018	33.908	0.000*	0.566
Group* Measurement	3379.018	1	3379.018	28.199	0.000*	0.520
Error	3115.464	26	119.826			

* $p < 0.05$

When Table 6 was examined, there was a significant difference in terms of group effect between the average scores obtained from the attitude scale by the physical education teacher candidates in the application and control groups, without distinguishing between the pre-test and post-test scores ($F_{(1, 26)} = 27.771$; $p < 0.05$). Likewise, it was determined that there was a significant difference in terms of measurement effect between the averages of the pre-test and post-test scores obtained from the attitude scale by the physical education teacher candidates in the application and control groups, regardless of group ($F_{(1, 26)} = 33.908$; $p < 0.05$). In addition, it was revealed that the joint effect of group and measurement was significant ($F_{(1, 26)} = 28,199$; $p < 0.05$). This finding shows that the scores obtained from the attitude scale by the physical education teacher candidates in the application and control groups in the pre-test and post-test measurements were Corrected Bonferroni values were used to examine the source of the difference in the scores obtained from the attitude scale of the physical education teacher candidates in the application and control groups over time (Table 7).

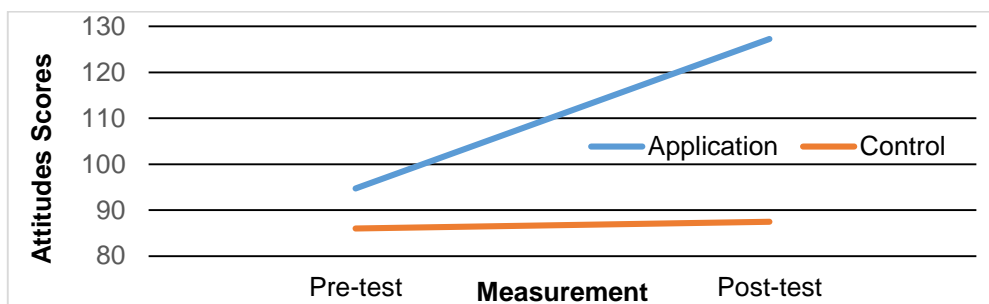


Figure 2. Graph of Average Scores Regarding the Attitudes Level of Physical Education Teacher Candidates

When Figure 2 was examined, there was a significant increase between the pre-test and post-test attitude scores of the physical education teacher candidates in the application group. This not case in the control group. When the findings obtained from the Repeated Measures Anova test and the interaction graph were evaluated as a whole within the scope of the study, it was observed that physical education and sports activities had a positive and significant effect on the attitude levels of physical education teacher candidates in the application group. These findings revealed that there was a positive change in the attitudes of physical education teacher candidates who participated in physical activities with individuals with intellectual disabilities regarding the effects of sports.

Table 7. Corrected Bonferroni Values for Attitudes Scores of Physical Education Teacher Candidates

Group	Measurement		Difference	p
Application	Pre-test	Pre-test	-32.571	0.000*
	Post-test	Post-test	32.571	
Control	Pre-test	Pre-test	-1.500	0.630
	Post-test	Post-test	1.500	

*p<0.05

When Table 7 was examined, there was a significant increase in the post-test scores of the physical education teacher candidates in the application group compared to the pre-test scores (corrected Bonferroni= $p < 0.05$, Difference= +32.571). This not case in the control group (corrected Bonferroni= $p > 0.05$, Difference= +1.500). In order to make sense of the corrected Bonferroni values, the interaction graph containing the findings regarding the attitude level of physical education teacher candidates in the application and control groups is presented in Figure 2.

DISCUSSION

Individuals with special needs, including those with intellectual disabilities, exhibit some differences in physical, cognitive, social and psychological development areas compared to their normally developing peers. Sports activities have an important place in eliminating these differences and supporting the development areas of individuals with intellectual disabilities³⁷. In order for individuals with intellectual disabilities to participate effectively in sports activities, it is important for PE teachers to have a positive awareness and attitude towards these individuals¹⁴. This importance will be better understood when considering the knowledge that PE teachers' awareness and

attitudes towards individuals with intellectual disabilities affect the participation of individuals with intellectual disabilities in sports activities³⁸. In the light of this information, this research aimed to investigate the changes in the awareness and attitudes of physical education teacher candidates towards the effects of sports. For this purpose, physical education teacher candidates participating in the study participated in physical activities with children with intellectual disabilities for two weeks. The results of the study revealed that physical education teacher candidates' awareness and attitudes towards the effects of sports changed positively after implementation period. The results obtained are similar to previous studies that aim to develop positive awareness and attitudes towards individuals with special needs in society, including teacher candidates, and organize practical activities in this direction^{19,29-31}. These studies revealed that teacher candidates who participated in activities with individuals with special needs, including those with intellectual disabilities, began to develop positive awareness and attitudes towards these individuals. In order for individuals with intellectual disabilities to actively participate in sports activities and benefit from the benefits of these activities, the awareness and attitudes of physical education teachers towards these students are extremely important¹⁴. In this context, the current study focuses on physical education teacher candidates who will be able to provide physical activity services to individuals with intellectual disabilities in the future to gain teaching experience for these individuals. As a matter of fact, positive changes were detected in the awareness and attitudes of physical education teacher candidates, who were in the application group and gained teaching experience with individuals with intellectual disabilities. Many previous descriptive studies have shown that the awareness and attitudes of physical education teachers who have experience teaching with individuals with special needs, including intellectual disabilities, towards these individuals change positively²⁰⁻²⁹. For example, Özer et al. (2013)³⁷ found in his study that physical education teachers who had educational experience with individuals with disabilities had high attitude levels towards individuals with disabilities.

Physical education teacher candidates in our country receive adapted physical activity lessons for individuals with special needs during the pre-service training process, as in similar examples around the world. In line with both the current research results and the relevant literature, practical training should be given as much as possible in these courses. Physical education teacher candidates who interact with individuals with special needs during practical training acquire teaching skills as well as positive awareness and attitudes towards these individuals^{19,39-41}.

Limitations

As a result of this research, it was determined that physical education teacher candidates participating in sports activities with individuals with intellectual disabilities had a positive effect on their awareness and attitudes towards the effects of sports. Although important results were revealed within the scope of the study regarding the awareness and attitudes of physical education teacher candidates, some limitations should be taken into account. Since the study was conducted with 28 physical education teacher candidates, the generalizability of the results may be limited. Since only numerical data was obtained through scales in the study, detailed findings regarding the reasons for the changes in the awareness and attitudes of physical education teacher candidates could not be obtained.

Recommendations

Based on the study results and limitations, the following suggestions can be made to improve the awareness and attitudes of physical education teacher candidates towards individuals with intellectual disabilities and to guide new studies on this subject:

- In adapted physical education courses included in the pre-service curriculum, practical trainings can be organized in which teacher candidates will participate together with individuals with intellectual disabilities.
- Interviews can be held with physical education teachers and candidates regarding the effectiveness of adapted physical education lessons.
- The relationships between physical education teacher candidates' awareness and attitudes towards students with intellectual disabilities and their self-efficacy can be examined.
- Qualitative methods can be used to examine in more depth the awareness and attitudes of physical education teacher candidates towards students with intellectual disabilities.
- The number of samples may be increased in future studies.

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