Macrothink Institute™

Journal of Educational Issues
ISSN 2377-2263
2022, Vol. 8, No. 3, Special Issue

The Effects of Adapted Physical Education and Sports Activities on Mental Adjustment Levels and Determination of Communication Skills of Trainable Mentally Handicapped Individuals

Zeynep Yildirim (Corresponding author)

Faculty of Sports Sciences, Bartin University, Merkez, Bartin, Turkey

Tel: 90-507-103-5971 E-mail: zerol@bartin.edu.tr

Received: August 14, 2022 Accepted: September 24, 2022 Published: October 15, 2022

doi:10.5296/jei.v8i3.20175 URL: https://doi.org/10.5296/jei.v8i3.20175

Abstract

This study aimed to determine the effect of exercise training on mental adaptation levels and communication skills in mentally handicapped individuals who were at an educable level. Based on this purpose, the Performance Determination Form for Individuals with Intellectual Disabilities, which was created in 2018 within the scope of the Ministry of National Education, General Directorate of Special Education and Rehabilitation Services, and Hacettepe Spiritual Adaptation Scale developed by Gökler and Öktem (1985) were given to the families of 11 mentally disabled individuals, (3 girls and 8 boys), with a mean age of 11.90. Afterward, 130 hours of adapted physical education and sports activities were applied to 11 trainable mentally retarded individuals, 90 minutes a day, 2 days a week for 12 weeks. After this activity, the same measurements were performed by the families again and the differences were examined. As a result of SPSS, although there was no statistical significance in the behavioural and neurotic results, which were the sub-dimensions of the psychological adjustment variable, a decrease was observed in the post-test mean scores after the exercise program was applied. This result proves that physical education and sports activities have positive effects on the mental adjustment of individuals with educable mental disabilities. Findings on receptive language skills and expressive language skills, which were sub-dimensions of the participants' communication skills, were examined. While the mean receptive language skills pre-test score was 31.72±3.00, the post-test mean score was 127.09±6.18, the expressive language skills pre-test mean score was 13.27±2.37, and the post-test mean score was 54.63±1.56. The observed difference was statistically significant. As can be seen, it was determined that physical education and sports activities applied have

positive effects on individuals with educable mental disabilities, both in terms of psychological adaptation and communication skills. As a result, it has been determined in this research that physical education activities, which are an integral part of education, are very beneficial in terms of mental adaptation and communication skills, which are vital for individuals with mental disabilities.

Keywords: Exercise, Educable mental disability, Spiritual harmony, Communication skills

1. Introduction

Sport has an important place in the socialization of the individual due to the benefits it provides to the socialization of the individual in terms of being active and beneficial to the social environment of the individual. Considering that sports are generally a collective activity in modern societies, individuals engaged in sports and social relations with different human communities through sports activities (Demirbilek, 2013). Sports enable the individual to get out of his/her own narrow world and to exchange feelings with people of other ideas, beliefs and thoughts on other platforms, to be inspired by them and to influence them (Yetim, 2005).

It is known by society that sports are a necessary effort for a peaceful and healthy life. It is important for all people from the beginning of life to the end. However, the importance of sports activities for individuals with special needs is different. Individuals with special needs eliminate many obstacles with the positive effects of sports activities. The benefits of sports are very important for individuals with special needs in terms of communication and spirituality. This situation allows individuals with special needs to open a new era for their contribution to their lives (Yaman, 2005).

Thanks to the benefit of sports, the individual will be in contact with different environments, and it will be beneficial for socialization in society. The communication models established in society and their contributions to mental health will be different over time. If we think of sports as an educational activity, it reveals appreciation and the ability to express common goals (Pumpkin, 2019). Sport creates acquiring a sense of responsibility, cooperating with other individuals, solution-oriented progress, and developing an understanding with the awareness of tolerance. It develops feelings of social relatedness. It ensures that negative feelings such as aggression, jealousy and anger arising from the individual's disability become controllable. Also, it reveals that in addition to the fact that sport is a regenerative tool, increasing the motivation of individuals with disabilities contributes socially and psychologically. It is also known that social harmony increases due to the development of the self-confidence of people with handicapped participating in sports activities and their contribution (Ergun, 2011).

In parallel with this information, we can say that the more handicapped people are involved in sportive activities, the more the negativities in front of the disabled will be destroyed one by one, and the obstacles in society will be removed (Karakoç, 2015).

Sports for individuals with handicapped whose importance is increasing day by day have recently gained increasing importance with specially prepared competitions. The spread of

the Paralympic games and the increase in the number of sports participations are an important example of this (Alpman, 2001).

Regardless of all the specific conditions of the individuals with special needs, the basic education care that they have the right to in all cases, age and gender should be provided. As it is aimed at the education of other individuals, it is aimed at the education of individuals with special needs to be able to lead an independent, peaceful life in society and to be integrated with society (Özer, 2005). To achieve this determined goal, it is possible to determine the educational materials by considering the unique competencies of the individuals and the areas in which they are successful, and by preparing and presenting the education service programs most appropriate way according to these needs (Koparan, 2003).

It is necessary for families to contribute to society in communication and spiritual sense by mixing with the handicapped individuals, to be discharged socially and spiritually, to reach satisfaction and get away from these problems not only in the family but also in society by dealing with different activities. In this sense, sport is an important area that families can do for fun or professionally, allowing them to calm down and transform mentally, spiritually, physically, and socially (Doğduay, 2013).

2. Method

2.1 Measurement Materials Used in the Study

In determining the performance of social and communication skills, “Performance Determination Form for Individuals with Intellectual Disabilities” was used. Related form is a standard scale “Pervasive Developmental Disorders Support Education Program” created within the scope of the Ministry of National Education, General Directorate of Special Education and Rehabilitation Services, and used as a performance measurement tool in all rehabilitation centres in the country. The Pervasive Developmental Disorders Support Education Program, in which the form is used as a standard measurement tool, has been prepared to enable individuals with pervasive developmental disorders who attend special education and rehabilitation centres within the scope of special education services to benefit from the educational environment efficiently and effectively. In the preparation of this program, additional article 3 of the Law No. 3797 on the Organization and Duties of the Ministry of National Education and article 25 of the Law No. 5793 on the Amendment of Certain Laws and Decrees with the Force of Law of 24/07/2008 constitute the basis. Performance Determination Form for Individuals with Intellectual Disabilities used to determine and prepare a training plan based on cognitive skills preparation, self-care skills, daily life skills, social life skills, language speaking and alternative communication skills, psychomotor skills, social life, Turkish and mathematical skills.

Hacettepe Psychological Adaptation Scale is a scale developed by Hacettepe University Faculty of Medicine, Department of Child, and Adolescent Psychiatry, by selecting questions that will be valid in our country from various scales applied to evaluate psychological adjustment, and its validity and reliability studies have been performed. In 1985, Prof. Bahar Gökler and Prof. Dr. Ps. Ferhunde Öktem Developed the scale, which is a 32-item scale that

includes mental symptoms that may occur in any child. There are 'No', 'Some', 'Many' options for each item; Scoring is performed by adding 0, 1, 2 points, which are the equivalents of these options. To determine compliance in the scale, in addition to 24 questions, there are 7 psychological symptoms such as stuttering, tics, nail biting, thumb sucking, accidentally pooping, urinating on the bed or school failure. Single-numbered items indicate neurotic problems, and double-numbered items indicate behavioural problems. Scores related to the first 24 items are collected over the total scale. If a total score of 13 and above is obtained, it is said that there may be a mental problem. The Psychological Adjustment Scale includes three factors to determine the psychological adjustment levels of children: 1-Neurotic problems; 2-Behavioural problems; 3-Other behavioural problems. As neurotic features: in 12 questions, shyness, shyness and insecurity, cowardice and timidity, selfishness and not sharing, not doing anything by oneself, being afraid at night and not sleeping alone, being anxious and delusional, being friendless and playing alone, going to school reluctantly, sluggish, and introverted. There are features such as being closed, being joyless and unhappy, and carelessness. Behaviour disorders: In 12 questions, mobility and restlessness, irritability and anger, jealousy, stubbornness, and disobedience, lying, taking things that do not belong to them without permission, not getting along with their peers, being unaffected by punishment and not being resilient, being quarrelsome and aggressive, hurtful, and offensive. There are features such as being harmful, irresponsible, and not doing one's own work, being unnecessarily meticulous. As other problems: 7 questions include items such as stuttering, tics, nail biting, thumb sucking, accidently pooping, urinating on the bed, and school failure.

2.2 Participant (Subject) Characteristics

A total of 11 individuals, 3 girls and 8 boys with the mean age of 11.90, participated in the study with educable mental disabilities. These individuals are studying at the Special Education and Practice School of the Ministry of National Education living in Bartın. Participants also continued Special Education Programs. However, the individuals participating in the research have not participated in any physical activity and exercise training before. During the implementation of the research, these individuals continued to participate in special education and practical training. The physical activity and application programs of the research took place in the gym of the school where they were educated.

2.3 Physical Activity and Exercise Program Details of the Study

While preparing the adapted physical education and sports program of the research, support was received from experts in the field, and it was prepared by evaluating the personal information and development of the participants. During the implementation of the program, trainers were available to work one-on-one with each participant, and it was ensured that these trainers had knowledge and experience in both physical education and sports and individuals with special needs. In the content of the exercise program applied; warm-up and stretching exercises (in a way that all participants and trainers can act jointly) 30 minutes of individual work (exercise program in which the trainer and participant work one-on-one and the purpose is the same every week but the content varies according to the characteristics of

the people), 30 minutes of social development supported group exercise (this part of the programs in which all participants and trainers work together), 10-minute matching exercises (performed by the disabled individuals by pairing with the outside intervention of the trainers).

Table 1. Example of the exercise program

1. Week	10-minute warm-up run, (Participants should be next to their trainers and run-in harmony without crossing each other and without holding the hands of their trainers). 5 minutes stretching exercises (A trainer and participant should pass in the middle in a circle and the others should be allowed to do stretching movements in harmony). 30 minutes of individual study (The trainer and the participant will work together, and the aim is to gain the ball skills. Gaining this skill will be done by progressing in parallel with the abilities of each participant. For example, a student with motor skills can work with a medicine ball, while a student with an underdeveloped can work with a tennis ball). 30 minutes group exercises with social development support (in this part, educational games that require competition and competition will be played, for example, handkerchief snatch). 10-minute paired exercise which is exercises that participants do with each other (the trainer will not participate in the exercise to give commands, for example, throwing the ball at each other), 5 minutes of cool-down

2.4 Analysis of Data

The data obtained from the research results were analysed in the SPSS 22.0 package program. In addition to frequency and percentage tables, the non-parametric Wilcoxon Ranks Test was applied to the data that did not show normal distribution to determine the differences between the pre-test and post-test values of the variables. The margin of error was determined as $p < 0.05$

3. Results

Table 2. Mean age of the participants

	N	**Age (Year)** (Mean±SD)
N	11	11.90±2.02

According to Table 2 mean age of the participants of the research was determined as 11.90±2.02 years.

Table 3. Frequency table of participants' demographic characteristics

Variables		N	%
Gender	Female	3	27,3
	Male	8	72,7
	Total	11	100,0
The Degree of Proximity	Mother	6	54,5
	Father	5	45,5
	Other	-	-
	Total	11	100,0
Status of Doing Sport	Yes	-	
	No	11	100,0
	Total	11	100,0

The frequencies of the demographic variables of the participants were analysed in table 3. Thus, 72.7% of the participants were male and 27.3% were female; It is understood from the table data that 54.5% of the participants were the father of the degree of proximity, the degree of proximity of the 45.5% is the mother of the mother and finally all the participants did not do sports.

Table 4. Pre-test and post-test Wilcoxon test analysis results regarding the psychological adjustment variable of participants

	N	Pre-Test		Post-Test		
		Mean	Sd	Mean	Sd	p
Behavioural Problems	11	9.36	4.90	8.72	6.03	.624
Neurotic Problems	11	12.18	3.60	11.36	5.42	.918
Total	11	23.12	6.13	21.72	5.47	.755

Note. $p < 0.05$.

When we analyse Table 4 in detail; When the results of the participants' behavioural problems and neurotic problems, which are sub-dimensions of the psychological adjustment scale, were examined; behavioural problems pre-test mean score was 9.36±4.90, while post-test mean score was 8.72±6.03. Although this result was not statistically significant, a

significant decrease was observed between the pre-test and post-test mean scores after physical education and sports activities. Likewise, neurotic problems pre-test mean score was 12.18±3.60, post-test mean score was 11.36±5.42. Again, although there was no statistical significance here, a decrease was observed in the post-test average scores after the exercise program applied. This result proved that physical education and sports activities have positive effects on the mental adjustment of individuals with educable mental handicapped.

Table 5. Pre-test post-test Wilcoxon test analysis results regarding participants' communication skills

	N	Pre-Test		Post-Test		
		Mean	Sd	Mean	Sd	p
Receptive Language Skills	11	31.72	3.00	127.09	6.18	**.003***
Expressive Language Skills	11	13.27	2.37	54.63	1.56	**.003***
Total	11	45.00	2.56	181.72	6.19	**.003***

Note. p < 0.05*.

Considering Table 5; The results on receptive language skills and expressive language skills, which are sub-dimensions of the scale for the communication skills of the participants, were examined. While the mean receptive language skills pre-test score was 31.72±3.00, the post-test mean score was 127.09±6.18, and the expressive language skills pre-test mean score was 13.27±2.37, while the post-test mean score was 54.63. It was observed that it was ±1.56. This observed difference shows statistical significance (p < 0.05). According to results, it can be said that applied physical education and sports activities have positive effects on individuals with educable mental handicapped.

Table 6. Wilcoxon test analysis results regarding mental adjustment pre-test-post-test values according to participants' gender variable

	Gender	N	Pre-Test		Post-Test		
			Mean	Sd	Mean	Sd	p
Behavioural Problems	Female	3	6.33	3.21	14.66	2.30	**.109**
	Male	8	9.52	6.75	7.37	4.03	**.674**
Neurotic Problems	Female	3	12.66	3.51	12.66	.57	**.100**
	Male	8	10.87	6.12	12.00	4.27	**.944**

Note. p < 0.05*.

When Table 6 was examined; it was understood that there was no significant difference in the psychological adjustment levels of the participants according to the gender variables ($p > 0.05$).

Table 7. Wilcoxon test analysis results regarding the pre-test-post-test values of the participants' communication skills by gender variable

	Gender	**N**	**Pre-Test**		**Post-Test**		
			Mean	**Sd**	**Mean**	**Sd**	**p**
Receptive Language Skills	Female	3	31.00	3.00	127.66	.57	.109
	Male	8	32.00	3.16	126.87	7.37	**.012***
Expressive Language Skills	Female	3	14.00	2.64	54.33	2.08	.109
	Male	8	13.00	2.39	54.75	1.48	**.012***

Note. $p < 0.05$*.

When we look at Table 7; We can state that, post-test values of receptive language skills and expressive language skills of male participants unlike female participants changed positively compared to the pre-test values after physical education and sports activities applied on the communication skills levels of the participants according to their gender variables, and this change was statistically significant ($p < 0.05$).

Table 8. Wilcoxon test analysis results of mental adjustment pre-test-post-test values according to the variable of degree of proximity

	Degree of Proximity	**N**	**Pre-Test**		**Post-Test**		
			Mean	**Sd**	**Mean**	**Sd**	**p**
Behavioural Problems	Mother	6	10.33	4.63	9.83	5.19	.917
	Father	5	6.80	7.46	8.80	5.06	.500
Neurotic Problems	Mother	6	12.00	6.19	12.66	4.80	.916
	Father	5	10.60	4.92	11.60	1.67	.713

Note. $p < 0.05$*.

When Table 8 was examined; It was determined that there was no significant difference in the psychological adjustment levels of the individuals according to the variables of the degree of

proximity (p > 0.05).

Tablo 9. Wilcoxon test analysis results regarding communication skills pre-test-post-test values according to the variable of relationship degree

	Degree of Proximity	N	Pre-Test		Post-Test		
			Mean	Sd	Mean	Sd	p
Receptive Language Skills	Mother	6	31.16	3.25	125.16	7.13	**.028***
	Father	5	32.40	2.88	129.40	4.44	**.043***
Expressive Language Skills	Mother	6	13.16	2.63	54.33	1.50	**.028***
	Father	5	13.40	2.30	55.00	1.73	**.042***

Note. p < 0.05*.

When Table 9 was examined in detail; it can be said that there was a significant positive change between the receptive language skills and expressive language skills pretest-posttest values of individuals whose degree of closeness was both mother and father, and this situation was statistically significant (p < 0.05). When evaluated in terms of closeness, it was understood that physical education and sports activities applied had positive effects on the communication skills of individuals.

4. Discussion

When the pre-test and post-test scores of the participants' receptive and expressive language skills were examined in the study, statistically significant results were found in the mean scores. In addition, according to the gender variables of the participants, it can be stated that after the physical education and sports activities were applied to the communication skills levels of the male participants, unlike the female participants, the post-test values of the receptive language skills and expressive language skills of the male participants changed positively compared to the pre-test values, and this change was statistically significant. This may be since the number of male participants is higher than that of female participants. We can say that there was a significant positive change between the receptive language skills and expressive language skills pre-test, and post-test values of individuals whose degree of proximity was both mother and father, and this situation was statistically significant. The fact that individuals with special needs spend more time with their parents can mean that the answers given by both parents were in the same direction since the caregiver was constantly following them. When evaluated in terms of degree of proximity, it can be stated that physical education and sports activities have positive effects on the communication skills of individuals. When the relevant literature was examined; In the research conducted by Çevik and Kabasakal (2013) It was determined that the general and sports-related conditions of 43 mentally handicapped individuals in Karaman city centre and it was concluded that the

participants of the mentally handicapped individuals who can be trained did not do sports and therefore they were insufficient in terms of communicating in society and participating in the decisions. In another study, Solomon et al. (2007) found that game-based interventions applied to individuals with ASD contributed to their communication skills. In the study conducted by Foster-Sanda (2014), it was concluded that physical activity and game-based intervention programs applied to handicapped individuals had a positive effect on their communication skills. MacFadden, Kamps, and Heitzman-Powell (2014) Peer networks program was applied to the mutual social communication skills of children with ASD. Within the scope of the research, verbal and non-verbal communication of individuals was observed. When the findings obtained because of the research were examined, it was determined that the verbal and non-verbal communication skills of the applied program have improved. According to Keskin, Güvendi, and Altıncı (2014) in another study; It contributed to the socialization of physically handicapped individuals with its features such as acquiring sports friends, caring about teamwork, and being tolerant.

All these studies seem to support our study. It can be said that adapted physical activity and exercise programs support the acquisition of language skills, which is one of the daily life skills, for individuals with special needs to experience the feeling of success in a competitive environment, thus increasing their self-confidence and constantly taking orders from their trainers. In addition to all this information, the reason for the increase in communication skills is to move with the group they learned in the physical activity and exercise program, take turns using their own voice, work in pairs in the games and use the given commands while continuing the formal education and special education programs of the individuals with special needs. We can say that taking actions such as buying and receiving was effective in increasing children's communication skills.

It can be said that exercise contributes to communication skills, and we can state that this contribution also supports individuals' acquiring a social circle and socialization. Individuals with special needs who have developed receptive and expressive language can be quite successful in starting and maintaining communication in daily life. This success also contributed positively to the establishment of a social environment and socialization of individuals due to the increase in self-confidence. When the literature was examined; In the study conducted by Öztürk-Akçalar (2007), it was aimed to examine the effects of participation in sports on socialization in physically disabled people, and physically handicapped individuals whom both play basketball with a wheelchair and watch only basketball matches were included in the research. At the end of the study, it was concluded that the socialization levels of the physically handicapped people who play basketball were higher when compared to the physically handicapped people who watch the competitions only as spectators. This result was similar to our study.

In the study conducted by Söğüt (2006), it was aimed to examine the effects of participation in sports on socialization in physically disabled people and it was reported that it contributes to development in the field of skills like making friends, group membership, being tolerant, feeling valuable, gaining a sense of competition, giving importance to teamwork, and caring about national values.

İlhan (2008) examined the effects of physical education and sports on the socialization levels of mentally handicapped children. In this research conducted by İlhan (2008), it was concluded that the physical education program contributed positively to the socialization levels of mentally handicapped children. Berber (2011) examined the effect of sports on the socialization of 100 hearing-impaired individuals, and as a result, it was stated that sports could be used as an effective socialization tool in the socialization of hearing-impaired individuals. In the study conducted by Tuncer (2009), it was reported that participation in sports has a protective role in preventing negative effects such as embarrassment of the opposite sex, fear of being criticized, being disliked, and not being understood by others. All this information also supports that physical activity, exercise and sports programs increased the communication skills of individuals with disabilities, which were the basis of socialization, in daily life.

When the psychological adjustment levels of the participants were examined; In the sub-dimensions of the scale on behavioural problems and neurotic problems, the pre-test mean score of behavioural problems was 9.36±4.90, while the post-test mean score was 8.72±6.03. Although this result was not statistically significant, a significant decrease was observed between the pre-test and post-test average scores after physical education and sports activities. Likewise, the neurotic problems pre-test mean score was 12.18±3.60, and the post-test mean score was 11.36±5.42. Again, although there was no statistical significance here, a decrease was observed in the post-test average scores after the exercise program was applied. This result proves that physical education and sports activities have positive effects on the mental adjustment of individuals with educable mental handicapped. When the literature was examined; Yancı-Ataman (2010) found a significant difference in favour of the experimental group between the neurotic and behavioural problems pre-test and post-test mean scores of the experimental and control groups in the sportive recreation activity program applied to mentally retarded individuals for 12 weeks. Şenlik et al. (2017), in the study planned as 2 groups, 16-week physical education and sports lessons were applied to the experimental group. As a result of the research, it was determined that there was a significant decrease in mental adjustment, neurotic, behaviour, and other behavioural problems. In the research conducted by Güvendi and İlhan (2017), it was determined that the adapted physical activity program, which lasted for 12 weeks and applied for 1 hour, two days a week, in the sample of mentally handicapped individuals led to improvement in the mental adjustment levels of the individuals. All these studies support our study.

In conclusion, it can be said that the participation of individuals with special needs in exercise programs and physical activities, in addition to eliminating the negativities brought by sedentary life throughout their lives, have the power to greatly affect the individual’s chance of being more harmonious in society by activating the feelings of obeying the rules, gaining self-confidence and peer acceptance. Moreover, individual training programs, which are prepared by following the developmental characteristics of individuals, can also support the acquisition of self-confidence by eliminating deficiencies, ensuring their spiritual harmony, and most importantly, gaining the ability to express themselves not only in activity programs but also in their daily lives. In conclusion, exercise has a positive effect on the sociological,

psychological, and physiological development of individuals with special needs has been emphasized once again.

References

Akçalar, Ö. S. (2007). *The Effect of Sports on the Socialization of the Orthopedically Disabled* (Thesis No. 204244). National Thesis Center of the Council of Higher Education.

Alpman, C. (2001). *Physical Education and Its Development through the Ages in the Integrity of Education.* Can Advertisement Press House & Publication Offset Printing, Ankara.

Avcıoğlu, H. (2012). Effectiveness of Learning Related with Cooperation and Drama Methods in Gaining Social Abilities of Mentally Handicapped Children. *Education and Science Magazine, 37*(163), 110-125.

Berber, R. (2011). *The Effect of Sports on the Socialization of the Hearing Impaired* (Thesis No.289051). National Thesis Center of the Council of Higher Education.

Demirbilek, M. (2013). Requirements of Mentally Disabled Individuals and Their Families. *Turkish Journal of Family Medicine and Primary Care, 7*(3), 58-64. https://doi.org/10.5455/tjfmpc.45355

Doğduay, G. (2013). *The effect of sport on quality of life in parents who have disabled individual* (pp. 31-38, Master Thesis, Institute of Educational Sciences, Sakarya University, Turkey).

Emamvirdi, R., Asl, N. R. H., İlhan, L., & Çolakoğlu, F. F. (2020). Psychological flexibility and sports participation motivation in athletes with physical disabilities. *Journal of Physical Education and Sport Sciences, 14*(2), 271-281.

Ergun, N. (2011). Sport for People with Disabilities in Croatia. *Physical Education and Sports Congress for the Disabled with International Participation Congress Book* (pp. 42-47).

Foster-Sanda, S. (2014). *Enhancing the play and commenting abilities of toddlers with autism spectrum disorders through caregiver-implemented teaching of play* (Order No. 3730183).

Güvendi, B., & İlhan, E. L. (2017). Effects of Adapted Physical Activity Applied on Intellectual Disability Students Toward Level of Emotional Adjustment, Self-Managing and the Socialization: Parent and Teacher Interactive Research. *Journal of Human Sciences, 14*(4), 3879-894. https://doi.org/10.14687/jhs.v14i4.4812

İlhan, L. (2008). The effect of physical education upon the socialization levels of mentally handicapped children. *Kastamonu Education Journal, 16*(1), 315-324.

Kabak, S. (2019). *Awareness and Attitude Levels of Teachers in Different Branches towards Sports Activities of Mentally Handicapped Individuals* (Master Thesis, Institute of Educational Sciences, Department of Physical Education and Sports Education, Gazi University, Ankara).

Karakoç, B. (2015). *The Effects of the 12-Week Recreational Physical Activity Program on the Trainable Mentally Handicapped and Their Families* (Master Thesis, Institute of Health Sciences, Department of Physical Education and Sports, Dumlupınar University, Kütahya).

Kasari, C., Paparella, T., Freeman, S., & Jahromi, L. B. (2008). Language outcome in autism: Randomized comparison of joint attention and play interventions. *Journal of Consulting and Clinical Psychology, 76*(1), 125-137.

Keskin, B., Güvendi, B., & Altıncı, E. E. (2014). *The Effect of Sports on the Socialization of the Physically Handicapped.* I. International Sports Sciences, Tourism and Recreation Student Congress, Akdeniz University, Antalya.

Koparan, Ş. (2003). Sports for Children with Special Needs. *Journal of Uludag University Faculty of Education, XVII*(1).

MacFadden, B., Kamps, D., & Heitzman-Powell, L. (2014). Social Communication Effects of Peer-Mediated Recess Intervention for Children with Autism. *Research in Autism Spectrum Disorders, 8*(12), 1699-1712. https://doi.org/10.1016/j.rasd.2014.08.015

Özer, D. S. (2005). *Physical Education and Sports for the Disabled* (2nd ed., Chapter 2-7). Nobel Publications, Ankara.

Öztürk Akçalar, S. (2007). *The Effect of Sports on the Socialization of the Orthopedically Disabled* (Thesis No. 204244). National Thesis Center of the Council of Higher Education.

Şahin, A. (2015). Social Development Deficiencies in the Handiccapped: The Benefits of Sports in the Socialization Process. *Journal of International Multidisciplinary Academic Researches, 2*(3), 20-28.

Şenlik, Z. A., Kul, M., Karataş, İ., & Mülhim, M. A. (2017). The Effect of Physical Education and Sports Lesson on the Spiritual Adjustment Levels of Children with Down Syndrome. *International Journal of Cultural and Social Studies, 3*(2), 263-282.

Söğüt, M. (2006). *The Effect of Sports on the Socialization of the Physically Handicapped* (Thesis No.192977). National Thesis Center of the Council of Higher Education.

Solomon, R., Necheles, J., Ferch, C., & Bruckman, D. (2007). Pilot study of a parent training program for young children with autism. *The PLAY Project Home Consultation Program. Autism, 11*(3), 205-224. https://doi.org/10.1177/1362361307076842

Tuncer, R. (2009). *Investigation of the Effects of Sports on the Mental Conditions of Individuals with Physical Handicapped* (Thesis No. 235513). National Thesis Centre of the Council of Higher Education.

Yaman, Ç. (2005). *Sports for the Handicapped: Lecture Notes* (p. 42). Sakarya University School of Physical Education and Sports Publications, Sakarya.

Yancı-Ataman, H. B. (2011). *Sports for the Handicapped Individuals: Lecture Notes* (p. 42). Sakarya University School of Physical Education and Sports Publications, Sakarya.

Yetim, A. (2005), *Sociology and Sports* (p. 119). Topkar Printing, Trabzon.

Yılmaz, A., Şentürk, U., & Ramazanoğlu, F. (2014). Content Analysis of Research on Sports for the Physically Handicapped. *Sports Management and Information Technologies 9*(1-2), 28-43.

Copyright Disclaimer