

# Play Therapy in Children with Autism Diagnosis: An Investigation into the Trainers' Opinions

Meliha UZUN<sup>1A</sup>, Baki YILMAZ<sup>1B</sup>

<sup>1</sup>Şirnak University, School of Physical Education and Sports, Şirnak /Turkey

<sup>2</sup>Ankara Yıldırım Beyazıt University, Faculty of Health Sciences, Department of Sport Sciences, Ankara/ Turkey

Address Correspondence to M. UZUN: e-mail: melihauzun16@gmail.com

(Received): 08.07.2020/ (Accepted): 31.08.2020

A:Orcid ID: 0000-0002-1691-3504 B:Orcid ID: 0000-0003-1415-0926

## Abstract

This study aims to investigate the situations related to the effect of play therapy as a therapeutic recreational activity on individuals with autism. Accordingly, the opinions of 15 therapist trainers working at the Special Education and Rehabilitation Centers in Şirnak province were received. The research is based on a "phenomenology" model, which is one of the qualitative research patterns, and sampling was selected by using the "criterion sampling". In the research, a semi-structured interview technique was used as a data collection method. A personal information form and a semi-structured interview form consisting of five questions were applied to determine the opinions of the trainers about the effect of play therapy. The Nvivo program was used to evaluate the data obtained. The data were analyzed by the inductive analysis method. As a result of analyzing the research data, it was determined that the effect of play therapies for children with autism was in five categories such as "applied activities, effects, acquisitions, problems, and suggestions". According to the research findings, it was observed in practices that children experienced various tantrums, attention deficit and communication gap, had anxiety in a crowded environment as well as were socially and psychologically affected and failed to adapt. Through the play therapy was a crucial element in the process of integrating into life by providing children with autism many positive acquisitions such as improving attention and concentration, ensuring cognitive, physical, emotional and multiple developments, acquiring communication skills, reducing problematic behavior, increasing focus, and socializing through an increase in social interaction features such as contributing to establish eye contact. In addition, it is very important to cooperate with families ensuring that they also actively participate in the education process to continue education in a coordinated manner.

**Keywords:** Autism, Play Therapy, Therapeutic Recreation

## INTRODUCTION

"Autism spectrum disorder (ASD) is a complex developmental condition that involves persistent challenges in social interaction, speech, and nonverbal communication, and restricted/repetitive behaviors" (3). Initial signs and symptoms typically are apparent in the early developmental period; however, social deficits and behavioral patterns might not be recognized as symptoms of ASD until a child is unable to meet social, educational, occupational, or other important life stage demands. Functional limitations vary among persons with ASD and might develop over time (6). This neurodevelopment condition has a frequency of one

in 110 children in the USA and one in 625 children in Malaysia (21).

Negative symptoms in ASD are characterized by difficulty with common social behaviors in typical individuals, such as eye contact, flexibility of thinking, social involvement, name response, facial and verbal expression (13). Individuals suffering from autism often lack basic life skills. In other words, they lack significant self-care, daily life, social, communicative, and academic skills. In addition, individuals with autism who lack social emotions, experience social shyness and communication disorders, and prefer loneliness are likely to have a negative interaction with the society

as they grow (11). In this context, therapeutic practices help or reduce the functional limitations that prevent the individual from increasing their leisure awareness, knowledge, skills, abilities, and participation in activities (18). Also, therapeutic interventions based on a variety of approaches attempt to help children on the spectrum improve physiological and cognitive aspects; enhance their social, linguistic, and communication skills (25); and promote their optimal development and well-being (32). In addition, such practices contribute to the acquisition of basic skills such as self-care, hand-face washing, and other advanced skills such as social and emotional skills (4).

Traditional therapy methods are often dull for individuals with autism. They also have various challenges in their practices. However, therapy with sports activities offers an alternative as it contains creative, entertaining, and playful aspects. In addition, recreational sports activities, which increase the quality of life, develop the ability to live more independently, provide effective socialization, control stress and gain the power to use their physical abilities more functionally, can also be regarded as an alternative form of therapy (18). In this respect, recreation is the most natural and active learning environment for children as it prepares them for life. Recreation plays a crucial role in educating, recognizing, and communicating with children as well as in enhancing the level of skills and knowledge especially in early childhood (5).

Yavuzer (34) defines recreation as “an activity that is pursued for purposes of pleasure rather than

for result-based purposes”. According to Freud, recreation helps children freshen up by ensuring the release of negative emotions caused by traumatic events or personal conflicts (24).

The effects of recreations and pursuing recreational activities on the development of children's mental, cognitive, physical, social, emotional, and self-care skills have been supported by studies (26). In addition, one may notice that the therapeutic recreation helps individuals express emotions and unwanted motives by reducing tension and stress. It also facilitates the transmission of fears and requests through non-verbal communication (19). In this respect, the main goal of the study is to examine the situations related to the effect of the therapeutic play activity, as part of recreational therapy, on individuals with autism.

## METHOD AND MATERIAL

Information on the analysis of the data obtained is included in this section.

### Study Group

This research was carried out through the participation of 15 therapist trainers working at Special Education and Rehabilitation Centers in Şırnak province. Before the interview, the trainers were first briefly informed about the study and subsequently, the interviews were held. These interviews took about 45 minutes. The data of the study group of the research have been presented in Table 1.

**Table 1.** Information About The Trainers

Participant	Gender	Age	Professional Seniority	Field of Study
K1	Female	25	2	Special Education Teacher
K2	Male	24	1	Preschool Teacher
K3	Female	25	2	Mentally Handicapped Teacher
K4	Female	25	2	Mentally Handicapped Teacher
K5	Male	30	3	Philosophy Teacher (with pedagogic-guidance certificate)
K6	Female	23	1	Preschool Teacher
K7	Female	29	10	Preschool Teacher
K8	Male	33	6	Class Teacher
K9	Male	37	15	Physical Education Teacher
K10	Male	24	2	Class Teacher
K11	Male	28	4	Psychological Counselling and Guidance Teacher
K12	Male	28	3	Mentally Handicapped Teacher
K13	Male	24	1	Preschool Teacher
K14	Male	32	6	Special Education Teacher
K15	Female	26	3	Special Education Teacher

Table 1 shows that therapist trainers participating in the research have a professional seniority of 1 to 15 years. The study group consists of 15 therapist trainers (f: 6, m: 9). The study consists of 3 special education teachers, 4 preschool teachers, 3 mentally handicapped teachers, 1 philosophy teacher with a pedagogical guidance certificate, 2 class teachers with a certificate of mentally handicapped teaching, 1 physical education teacher, and 1 psychological counselling and guidance (PDR) teacher ranging between 23 and 37 years old.

### Research Design

The research is based on a "Phenomenological" model. Phenomena occur in the form of events, perceptions, experiences, trends, etc. in the world we live in. Accordingly, the relevant design was used to determine the effects of play therapy on children diagnosed with autism based on the opinions of therapist trainers. The sample was selected via the "criterion sampling" method, which is a variant of the sampling method for sampling purposes.

### Data Collection Tools

In the study, the semi-structured interview technique was used as a data collection method. To determine the effects of play therapy on the lives of children with autism based on the opinions of therapist trainers, face-to-face and in-depth interviews were held with 15 trainers. Within this scope, semi-structured questions (5 questions) were asked and in-depth interviews were conducted to determine the opinions of trainers on the process.

### "Semi- Structured Interview Form"

The semi-structured interview form consists of questions to determine the effects of play therapies on children with autism.

The questions in the form are as follows:

1. Can you give information about the activities for children with autism in your institution? What kind of activities do you pursue?

2. What are the effects of the activities on the development of children? Can you illustrate them?

3. What do you think about the areas of play therapies that may influence children with autism?

4. What are the effects of play therapies on children with autism? Can you name one of its positive or negative effects?

5. What do you suggest to get a high level of efficiency from education? What can be done?

### Analysis of Data

The data obtained in the research were transferred to the Nvivo software program and analysed by the inductive analysis method. From the data transferred to the Nvivo program, a coding table and a theme frame was created. These themes and codings were formed after being supported by the statements of the trainers.

### RESULTS

This section covers the interpretation of the findings regarding the effect of play therapies on the education of children with autism.

Information about the themes formed as a result of interviews with the trainers has been presented in Figure 1. In total, 5 themes were created regarding the effects of play therapies on children with autism.

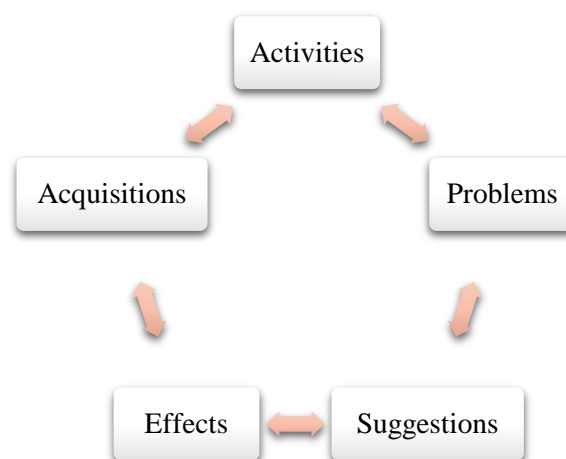


Figure 1: Themes regarding trainers' views

<b>APPLIED ACTIVITIES</b>	<ul style="list-style-type: none"> <li>In-class</li> <li>Recreation-based</li> <li>Playing ball</li> <li>Latch</li> <li>Setting up a tent</li> <li>Bubble Foam</li> <li>Potato print</li> <li>Swimming on the ground</li> <li>Glass</li> <li>Cushion</li> <li>Attention-grabbing</li> <li>Hand-eye coordination</li> <li>Language and communication</li> <li>Short-term activities</li> </ul>
<b>EFFECTS</b>	<ul style="list-style-type: none"> <li>Cognitive development</li> <li>Muscle development</li> <li>Multiple development</li> <li>Language development</li> <li>Motor skills</li> <li>Emotional</li> <li>Physical</li> <li>Decrease in problematic behavior</li> <li>Motivation</li> <li>Communication</li> <li>Psychological</li> <li>Attention</li> </ul>
<b>ACQUISITIONS</b>	<ul style="list-style-type: none"> <li>Concentration</li> <li>Self-expression</li> <li>Exploring</li> <li>Interaction</li> <li>Feeling comfortable</li> <li>Focusing</li> <li>Social interaction</li> <li>Solving problems</li> <li>Small problem behavior</li> <li>Socialization</li> <li>Fusion</li> <li>Permanent learning</li> <li>Eye contact</li> <li>Friendship relationship</li> </ul>
<b>PROBLEMS</b>	<ul style="list-style-type: none"> <li>Increased problematic behavior</li> <li>Limited activities</li> <li>Events do not affect development</li> <li>Lack of attention</li> <li>The emergence of social and psychological effects</li> <li>Temper tantrums</li> <li>Being affected by the crowded environment</li> <li>Strong reactions</li> <li>Communication gap</li> <li>Failing to adapt</li> </ul>
<b>SUGGESTIONS</b>	<ul style="list-style-type: none"> <li>Cooperation with families / Informing Families / Responsibility /</li> <li>Continuing work at home / Parents' involvement/</li> <li>Increase in Training Hours / Increase in Social Activities</li> <li>Patience / Coordinated work / Getting to know the student</li> <li>Loving the student / Planning / Help / Early treatment</li> <li>Sports education / Music education</li> <li>Specialist teacher</li> <li>Continuity in education</li> <li>Activities with materials</li> <li>Controlled use of devices</li> <li>Discipline</li> <li>Confidence</li> <li>Believing</li> <li>Optional activities</li> </ul>

**Figure 2.** Report 1: Report results on trainers' views

As a result of the analysis of the data obtained, five themes were created after interviews were conducted with 15 therapist trainers. Given the first theme, the trainers performed practices to strengthen attention, hand-eye coordination, language, and communication within the scope of recreation-based activities besides activities such as ball, latch, and swimming. Therapist practices based on the second theme had positive effects on children's cognitive, muscle, and language development as well as on their motor skills, communication, and psychology, etc. Practices based on the third theme helped children gain acquisitions such as socialization, focus, concentration, self-expression, socialization, social interaction, etc. Based on the fourth theme, children experienced temper tantrums, attention deficit, communication gap, problems in adapting as well as encountered various problems such as failing to get enough efficiency from the activities throughout activities. Finally, therapist trainers offered various suggestions such as contact with the family, increase in social activities, making use of sports and music during activities, showing patience, loving and recognizing the student, and ensuring continuity in education based on the fifth theme.

Some of the responses of therapist trainers are as follows:

#### **APPLIED ACTIVITIES:**

K7: "Short-term activities should be preferred without causing boringness. For, half of the children with autism are expected to very active while the other half of them to be very quiet. The latch game (separating the colored latches according to their colors), stringing the beads, bubbling foam, setting up tents, building the potato print etc. may be pursued as activities."

#### **EFFECTS:**

K8: "By means of the role modeling method, children develop motor skills such as speech. Dialogues and roles may help children develop socially. Activities may allow children to able to think in detail and comprehensively, and the decision-making ability contributes to the development of the children psychologically and emotionally."

#### **ACQUISITIONS:**

K13: "I think activities help children feel better socially, emotionally, and psychologically and communicate better with his/her peers as well as interact with his/her circle more."

#### **PROBLEMS:**

K12: "When children play activities to a great extent, these activities may return to the environment and the parent as a backlash."

#### **SUGGESTIONS:**

K6: "Humbly, I can say that first of all, we need the patience to get a high level of efficiency. This is not something that will happen only by means of the teacher. Perhaps this situation may be harder than most of the other obstacles. But we do have the luxury to say that we cannot do this or that just because it is not too hard. Apart from that, our target behaviors should be at the level of the student we are interested in and "appropriate for him/her." In general, the activities targeted for children with autism should be a little further away from the perception such as "I should do only these things", and we should get to know our student better and do activities that are fitted for his/her interests and wishes. And the most important thing is the contribution of the family as parents undertake a crucial and humanitarian task here. Love them, approve them, trust them, and know them. You should be the ones who know and trust most. Patience is what families and teachers should take as a mission and what children need most."

#### **DISCUSSIONS AND CONCLUSIONS**

In light of the findings obtained in this study, the following interpretations were included.

The questions were asked to the trainers about common activities in their institutions, how these activities influence the development of children as well as about their opinions and suggestions regarding acquiring higher efficiency in education.

Based on the trainers' responses, 5 different themes including "applied activities, effects, acquisitions, problems, and suggestions" emerged along with an evaluation within the framework of these themes (Report 1).

Trainers indicated in-class activities, recreation-based activities, playing ball, latch, setting up tents, bubble foam, potato prints, swimming on the ground, cups, mattresses, attention-enhancing activities, activities that provide hand-eye coordination, activities to improve language and communication skills as activities carried out in their institutions as short-term activities. These themes were coded as "Applied Activities". Children with autism spectrum disorders have limited recreation skills from an early age. They perform at a lower level in their symbolic recreation skills, especially compared to their peers with normal development and children with developmental retardation. For this reason, it was seen that the problems of children with autism may have a crucial role in language development due to the relationship between language and symbolic recreation skills (23). Children with autism often have poor motor skills. Thus, applied programs should focus on basic motor skills, developmental activities that may improve individual recreation, sports, and physical activity (35). Recreations are vital in the lives of children with special needs. They ensure that children focus on a particular thing through fun and gain advantage in terms of hand-eye coordination development. In addition to visual-spatial competencies, recreations also contribute to positive behavioral developments (14). In a study conducted by Harbin (16), children with autism underwent an embedded physical activity for 2-3 minutes. After this activity, there was an increase in the participation of children with autism in apartment-based games and independent activities. Chiang (9) investigated the importance of social interaction within the scope of physical activity with therapeutic recreation practices of children with autism. In this context, by making physical activities more entertaining, they achieved the desired goal more easily. However, it was stated that social interaction may increase resulting in a decrease in feelings of loneliness for children with autism.

The themes including cognitive development, muscle development, multiple development, language development, motor skills, emotional development, physical development, decrease in

problematic behaviors, motivation, communication, psychological and attention themes were indicated under the code of "Effects", while the themes including concentration, self-expression, exploring, interaction, comfortable behavior focus, social interaction, solution of problems, decrease in problematic behavior, socialization, permanent learning, eye contact, and friendship relationship were indicated under the code "Acquisitions". Therapeutic recreation practices include activities that help individuals with autism relax and have fun despite some obstacles and weaknesses (18). It was determined that individuals with a diagnosis of autism spectrum disorder show less problematic behaviors in parallel with sports. Considering rough and fine motor skills, it was observed that these skills were better in the sports group (20). In the study of Yilmaz et al. (35), balance, agility, speed, and power scores increased with the exercise. In addition to the increased grip, an increase in muscle strength and cardiovascular endurance was also observed in the lower and upper extremities. In another study, the stereotypical behavior of children decreased with the applied program. Besides, there was an increase in motor performance. It was also observed that it improves physical fitness (33). Another effect is its positive effect on loco-motor and object control (12). In a study by Celik (10), the psychological symptoms of children decreased after the experiential play therapy. Similarly, play therapy was found to be highly effective in reducing trauma symptoms in children (22, 27).

In another study, the effect of play therapy on attention and language skills was examined. It was determined that play activities have a positive effect on attention skills (15). Similarly, play therapy was shown to have a positive influence on attention (2). As recreation sessions of children increased, their language and social skill levels increased (7). Play therapies may also be considered as an effective method in the therapy of somatic symptoms (30). In his research, Tural (31) stated that play therapy is an effective factor in reducing anxiety levels of children. In a study in which child-centered play therapy was performed, positive effects were observed in the case of a child with excessive avoidance behavior such as decreased tension, more agility in their behavior, increased verbal communication and progress of social interaction (8). In their study, He et al. (17) found that children participating in therapeutic recreation practices had

a significant decrease in their anxiety, pain, and negative thinking scores compared to the control group. In another study, the social, emotional, and behavioral skills of children increased positively with play therapy (28). In addition, play activities increased children's academic success. They also contributed psychologically to their well-being, reduced depression and anxiety, increased self-esteem, and made the children more assertive. It was also emphasized that children live at peace and in harmony with other individuals thanks to the effect of the recreation on socialization (1). In another study, therapy was applied to a girl living in bad home environment with negative and aggressive attitudes. After the relevant child-centered play therapy, the child learned to control her anger and to establish a relationship with her environment and found that she is loved and accepted by her circle (8). According to Karakucuk (18), through the "physical dimension" of the therapeutic recreation, there is an increase in coordination, endurance, mobility, strength, and hand-eye coordination while through the "cognitive dimension", memory, orientation attention range, reading ability, and ability to comply with directions improve. Besides, it was stated that through the "emotional dimension", anger control, emotional control, and emotional expression ability improve while through the "social dimension", basic behaviors that meet social expectations improve, albeit minimally (developing a sense of avoiding behaviors such as shouting, biting, kicking, spitting and caressing others).

Increased problematic behaviors, limited activities, failure to affect development, lack of attention, social and psychological effects, temper tantrums, exposure to the crowded environment, severe reactions, communication gap and failure to adapt themes were indicated under the code "Problems". Children with autism cannot play with toys or are prone to using toys unusually. While playing the toys, they obsessively play with certain parts of the toys. Their interests are limited and obsessive-compulsive disorders are common. In addition, they rotate objects, rotate in their environment, wave their hands by clapping, and often do some meaningless and repetitive movements. They do not accept changes and show resistance. In addition to experiencing panic when faced with a new situation, they may also have a

tantrum (29). Some of the therapist trainers' comments about these themes are given below.

"If done unplanned and haphazard, there is an increase in the child's behavior problems." (K4)

"This is an undesirable situation for most children with autism, as there is often a lot of physical interaction in recreations. Since the child experiences some kind of discharge, this situation can sometimes cause negative effects on him/her. After that period, it is difficult to get them to focus their attention on what is desired, so play therapy can be interrupted most of the time and the child can, unfortunately, shut off." (K6)

"They can have temper tantrums, be affected by the crowded and noisy environment very quickly and because they lead a routine life, they can react violently to external interventions." (K8)

Cooperation between families and trainers, informing families, responsibility, continuing work at home, repetition of the behavior, participation of families, increasing training hours and social activities, showing patience, coordinated work, learning and loving the student, planning, assistance, early treatment, sports education, music education, expert teacher, continuity in education, activities with materials, controlled use of devices, discipline, trust, belief and optional activities were indicated with the code "Suggestions". The suggestions of some therapist trainers are given below regarding the relevant themes given in this context.

"Works taking into consideration the needs of the child should be focused on. The family also needs to take responsibility for the work done. The family should be informed and act together with trainers in order to continue the work at home." (K2)

"Parent cooperation must certainly be done. If necessary, the family should personally participate in play therapies and educational environments. It should be ensured that every taught behavior continues at home." (K4)

"The only inevitable measure of efficiency in education consists of a triple cycle of teachers, students and of course family. Activities have shown that the efficiency graph in education has increased with the awareness of the family. Recommendations for the highest level of efficiency are: 1- To Increase hours of education based on continuity in education 2- To increase activities in all

areas of social life 3- to ensure the coordination of families and teacher and to continue a planned education by the parties 4- To prepare the child for every stage of life with play therapies by adopting lifelong education as a principle 5 "I think that it is necessary to make the individual and the families feel special and different, and to give the necessary importance to the place and time. 6- To periodically monitor the validity and reliability of all the works and activities, 7- I think that it is necessary to give the individual responsibility and not to be isolated from society." (K5)

"I think that for these children who cannot think abstractly, the most permanent learning will be ensured through experience. Permanent learning can be provided for the child by being a role model. Particularly, by participating in lessons, active participation can be achieved and learning can be made permanent. Families should be informed about their children in all matters as their child's most important and primary teacher is family. Knowing what the child needs, the family can approach the child more consciously in this regard." (K8)

"The causes of autism have been researched worldwide and it seems that autism has not been diagnosed so far. It is important to raise the awareness of families about the binary screening test. The therapy of children with autism should be started at an early age and they should definitely receive special education. Especially sports and music should definitely be used in therapy." (K9)

"Training for educational purposes is very important. It makes the given training more vivid. Making activities with creative drama games and materials is also very important for obtaining high level of education." (K12)

"Children should be given more opportunities to express themselves better and develop their self-confidence skills. Also, the interaction of children with electronic (phone, TV and tablet) devices should be controlled." (K13)

"Recreation is the most important dream world where children reflect themselves. The recreation is an important tool that also contributes to the child's overall development process. It contributes to the advancement of cognitive development, social-emotional development, language development, and motor development, based on fun rather than teaching." (K15)

In light of the research findings, the opinions of therapist trainers on the effect of play therapy on individuals with autism were examined. In this context, trainers indicated the effects and acquisitions of play therapy as key elements that ensure cognitive, physical, emotional, muscular, language and multiple development, motor skills, reduce problematic behaviors, strengthen motivation, positively affect communication skills, increase attention and concentration, help gain an ability of self-expression, contribute to social interaction by providing social interaction, play an active role in establishing eye contact, enable them to socialize by strengthening friendship relations, provide permanent learning, reduce the problem of focusing and facilitate their integration into life. In addition, trainees suggested that the role of the family in children's education is vital. In order to enhance the permanence and obtain high efficiency, activities should be followed at home. The role of play activities in improving the quality of life of children is an undeniable fact. It can be concluded that the research is expected to contribute to the existing literature.

## REFERENCES

1. Alp H, Camliyer H. The Children Participated with Social Adjustment Disorders Fused Extracurricular Movement Education and Game Activities Monitoring of Children's Social Adaptation Process Next Two Years. *International Journal of Social Sciences and Education Research*, 2015; 1: 109-120.
2. Altun K, Demir V, Unubol H. The effects of developmental play therapy on post traumatic emotional stress of the children 4-8 aged who have been undercared by government. *International Journal of Social Science*, 2019; 2(2): 35-46.
3. American Psychiatric Association. DSM-V-R Tanı ölçütleri başvuru kitabı, Çeviren: Ertuğrul Köroğlu. Ankara: HYB Yayıncılık, 2013.
4. Austin DR, Crawford ME. Therapeutic recreation: An introduction, eds, Allyn and Bacon press, 2001.
5. Ayan S, Memis UA. A Research Related to the Importance of Play in Early Childhood. *Journal of physical education and sport science*, 2012; 14(2): 143-149.
6. Baio J. Prevalence of autism spectrum disorder among children aged 8 years-autism and developmental disabilities monitoring network, 11 sites. United States, 2010, 2014.
7. Bayam A. Examination of the change in social skills and language development of the game session applied to children with autism spectrum disorder between 2-6 years of age. Master's thesis, Beykent University, İstanbul, 2017.
8. Candan S. The examination of the effectiveness of child-centered play therapy on 3-10 years old children with developmental problems. Master's thesis, Atatürk University, Erzurum, 2017.
9. Chiang T. Effects Of A Therapeutic Recreation İntervention Within A TechnologyBased Physical Activity Context On The



- Social Interaction Of Male Youth With, Autism Spectrum Disorders, Indiana University, 2003.
10. Celik M. The influence of experimental play therapy on post-childhood trauma emotional levels of children 3 to 10 years old living in orphanages. Master's thesis, Üsküdar University, İstanbul, 2017.
  11. Copuroglu YC, Mengi A. Social exclusion and autism. *Electronic Turkish Studies*, 2014; 9(5): 607-626.
  12. DeBolt LS, Clinton EA, Ball A. The effects of an adapted physical education program on children with autism: A case study. *Kentucky Newsletter for Health, Physical Education, Recreation & Dance*, 2010; 47(1): 24-27.
  13. DeJesus BM, Oliveira RC, de Carvalho FO, de Jesus Mari J, Arida RM, Teixeira-Machado L. Dance Promotes Positive Benefits for Negative Symptoms in Autism Spectrum Disorder (ASD): A Systematic Review. *Complementary Therapies in Medicine*, 2020; 49: 102299.
  14. Eristi SDB, Firat M, İzmirli S, Ceylan B. Design Based Instructional Game Development for Children with Autism Spectrum Disorder. *Journal of Uludağ University Faculty of Education*, 2017; 30(1): 73-99.
  15. Gozalan E. Effect of "game-based attention training program", prepared by the researcher, on attention and language skills of 5 and 6 year old children. Master's thesis, Selçuk University, Konya, 2013.
  16. Harbin SG. The effects of physical activity on engagement in young children with autism. Master's thesis, Available from ProQuest Dissertations and Theses database. (UMI No. 1516107), 2012.
  17. He H-G, Zhu L, Chan SW-C, Liam JLW, Li H.C.W, Ko SS,... Wang W. Therapeutic play intervention on children's perioperative anxiety, negative emotional manifestation and postoperative pain: A randomized controlled trial. *Journal of Advanced Nursing*, 2015; 71(5): 1032-1043.
  18. Karakucuk S. Terapötik Rekreasyon Bir Örnek Uygulama: OSEP (Ostistik Bireyler Spor Eğitim Projesi). Ankara: Gazi Kitabevi, 2012.
  19. Kuguoglu S, Tanir MK. Therapeutic use of play according to developmental stage. *Journal of Ege University Nursing Faculty*, 2006; 22(1): 293-304.
  20. Namli S. Comparison of the behavioral and motoric performances of autistic individuals according to their involvement in sports. Master's thesis, Sakarya University, Sakarya, 2012.
  21. Noor HAM, Shahbodin F, Pee NC. Serious game for autism children: review of literature. *World Academy of Science, Engineering and Technology*, 2012; 64(124): 647-652.
  22. Ogawa Y. Childhood trauma and play therapy intervention for traumatized children. *Journal of Professional Counseling*, 2004; 32(1): 19-29.
  23. Okcun-Akcamus MC. Social Communication Skills and Language Development of Children with Autism Spectrum Disorders. Ankara University Faculty of Educational Sciences *Journal of Special Education*, 2016; 17(02): 163-192.
  24. Ozturk Serter G. Psycho-education program based on structured play therapy effect on depression and adjustment level of divorced family children. Doctoral thesis, Ondokuz Mayıs University, Samsun, 2018.
  25. Salomon-Gimmon M, Elefant C. Development of vocal communication in children with autism spectrum disorder during improvisational music therapy. *Nordic Journal of Music Therapy*, 2019; 28(3): 174-192.
  26. Saltik N. An examination of the effects of the play therapy on social skills and problematic behaviours in children stayin in women shelter homes. Master's thesis, Ankara Yıldırım Beyazıt University, Ankara, 2018.
  27. Schottelkorb AA, Doumas DM, Garcia R. Treatment of childhood refugee trauma: A randomized, controlled trial. *International Journal of Play Therapy*, 2012; 21(2): 57-73.
  28. Sezici E. The effect of play therapy on social competence and behavior management on preschool children. Doctoral thesis, Marmara University, İstanbul, 2013.
  29. Tan MY. Measles, mumps, rubella antibodies in autistic children. Dissertation, Cukurova University, Adana, 2007.
  30. Teber M. The effect of child centered play therapy on children's problematic behaviors. Master's thesis, Hasan Kalyoncu University, Gaziantep, 2015.
  31. Tural E. Research on the effects of education and therapeutic play methods applied preoperationally on the anxiety, fear and pain levels of children. Doctoral thesis, Ege University, İzmir, 2012.
  32. World Health Organization. Autism spectrum disorders: Fact sheet, Retrieved from <http://www.who.int/mediacentre/factsheets/autism-spectrum-disorders/en/>, 2017.
  33. Yanardag M. Effects of the different exercise training on motor performance and stereotypical behaviors of children with autism. Doctoral thesis, Hacettepe University, Ankara, 2007.
  34. Yavuzer H. Çocuęu tanımak ve anlamak. İstanbul: Remzi Kitabevi, 2013.
  35. Yılmaz İ, Yanardag M, Birkan B, Bumin G. Effects of swimming training on physical fitness and water orientation in autism. *Pediatrics International*, 2004; 46: 624-626.