

Full Length Research Paper

The comparison of play skills of autistic mentally retarded and typically developing children

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Accepted 5 November, 2013

While the typical developing children show signs of symbolic play in the first two years of life, children with autism may never develop this skill. This deficit in play has implication for other areas of development. What is more? Play is correlated with language ability in both typically developing children and children with ASD. Play in children with ASD is closely linked to social development and peer interaction, and deficit in this area may cause children to be less accepted by peers in social situation. This study was conducted with the aim of comparing the play skills of 6-year-old (60-72 months) autistic, mentally retarded and normally developed children. The study was carried out on 150 children studying at special education institutions and kindergartens in Edirne, Kirklareli, Tekirdag city centers, and their towns with the participation of mothers or fathers of the children. Survey method was used in the study. The study is descriptive in nature. For data collection, "Parent Information Form", "Preschool and Kindergarten Attitude Scale" and "Play Skills Assessment Scale" were used. According to the results of Play Skills Assessment Scale Total Score Means, the means scores of normally developed children are higher than the means scores of autistic and mentally retarded children and the score difference was found statistically significant [$F(2-147)=70,44, p<0.05$]. Mentally retarded means scores were found to be higher than the means scores of autistic children, but the score difference was not statistically significant [$F(2-147)=70,44, p>0.05$]. As a result, it can be concluded that the play skills of autistic and mentally retarded children are more deficient than the play skills of normally developed children. It should not be forgotten that to remove this deficiency, autistic and mentally retarded children need to play more.

Key words: Autism, mentally retarded children, normally developed children, play skills

INTRODUCTION

Autism spectrum disorders (ASD) are group of developmental disabilities characterized by impairments in social interaction and communication and restricted in repetitive and stereotyped patterns of behavior. Symptoms typically are apparent before the age of 3. Along with this, there might be cases where all stated criteria are not observed. For example, an individual who does not have language development disorder might have difficulties in social communication (Haesen et al., 2011). Also, as noted in diagnostic criteria for autism (American Psychiatric Association, 2000), play deficits are one hallmark characteristic

of this disorder. While the typical developing children show signs of symbolic play in the first two years of life, children with autism may never develop this skill. This deficit in play has implication for other areas of development. Play is correlated with language ability in both typically developing children and children with ASD. Play in children with ASD is closely linked to social development and peer interaction, and deficit in this area may cause children to be less accepted by peers in social situation (Wolfberg, 2012). The challenges children with ASD face in play with peers are complicated by severe

and persistent deficiencies in social communication, attention, imitation, and social responsiveness. Problem in verbal and non verbal communication both may notably affect the capacity of children with ASD to enter into social play with peers. Children with ASD may also engage in other types of play behaviors that are qualitatively and quantitatively different from the play of typically developing children or children with other development delays. Children with ASD have profiles of social play that differ from their peers in various contexts and in a range of time periods. Given free-play conditions, some children with ASD stay aloof because they withdraw from peers, while others seem passive, because they merely watch or mostly imitate peers. In addition to such play skills, development is late with autistic children and even in some cases, play skills do not develop with autistic children at all. In other words, children with ASD have less play skills compared to their peers (Smith-D' Arrezo and Thomas, 2010; Machaliek et al., 2007; Wolfberg, 2012).

As mentioned in literature, play skills of autistic children differ from both mentally retarded and normally developed peers in terms of quantity and quality. While normally developed children are observed to have pretend play in their 18th months, autistic ones do not usually show this characteristic. Moreover, it is also stated that whereas normally developed children and usually children with other kinds of disabilities use toys according to their purposes, autistic children use materials for turning or setting the objects other than the real purpose. Normally developed pre-school children and mentally retarded children display such behaviors as interaction with peers during play or starting the play and continue or following the rules, although autistic children are inclined to play alone. Normally developed children, from the early childhood period, acquire the ability to learn differently by imitating the behaviors of adults and peers during the play (Dykstra et al., 2012; Stahmer, 2006; Wolfberg, 2012).

Stone et al. (1997) compared motor imitate ability of two-year-old autistic children and children having growth deficiency problem. The research showed that motor imitate ability of autistic children is almost the same with the motor imitate ability of children having growth deficiency problem. Additionally, Tilton and Ottinger compared the play skills of five-year old autistic, mentally retarded and normally developed children in the study they conducted in 1964. The results showed that 100% of normally developed children, 83% of mentally retarded children and less than 38% of autistic children had play skills. Moreover, Blanc et al. (2005) compared symbolic play skills of autistic, mentally retarded and normally developed children and the results of the research showed that autistic children were the most deficient in playing symbolic games, and normally developed children were the ones having the least deficiency. Further studies were also carried out to check different

types of mentally retarded children. For instance, in their study, Messier et al. (2008) stressed that play skills of mentally retarded children are interrelated with their mental levels. Among those children, the ones with higher mental levels were better at initiating a play, using the play materials, and communicating with the others. They also claimed that mentally retarded children had lack of intellectual (learning and problem solving) and adaptive behaviors. Therefore, slow growth can be observed in pretend, socio-dramatic, or cooperative plays. In another study in which the cognitive deficits of autistic children were interrelated with the difficulties they faced in the plays, twelve autistic children and twelve normal children were examined regarding their symbolic plays skills and it was found out that autistic children lacked play skills, and the authors tried to explain such situation with the theory of mind difficulties (Lam and Yeung, 2012).

In this scope, the main purpose of this research is to compare the play skills of autistic, mentally retarded and normally developed children with the participation of children's parents. Besides, the effects of parents' educational level, jobs, the number of siblings they have and the duration of preschool education of the child on the play skills of mentally retarded, autistic and typically developed children are investigated.

METHOD

Study Group

In this research study, the play skills and behavior problems of six-year-old (60-72 months) children with autism, children with mental retardation and normally developed children are compared. The population of this research was 7634 disabled and 4541 typically developed children. Random selection was used to determine the sample of the study. With this aim, the study group consists of six-year-old autistic, mental retardation and normally developing children studying at special education institutions and kindergartens in Edirne, Kirklareli, Tekirdag city centers and towns in 2012-2013 academic year; they were also the mothers of 150 children. The children were diagnosed with autistic children according to DSM-IV (Diagnostic Statistical Manual). The children autism level was mild. And also children with mental retardation IQ level was between 55-70. Diagnostic information about the children was gathered from Guidance and Counseling Research Centers in the above-mentioned city centers. Data analysis and comments were made upon statistical analysis of the data gathered from this study group.

Data collection tools

The present study is descriptive in nature. Survey method was conducted. For data collection, "Parent Information Form", "Preschool and Kindergarten Attitude Scale" and "Play Skills Assessment Scale" were used.

Parents' information form

In order to gather demographic data of the parents who participated

in the research, Parent Information Form developed by the researcher was used. The form consisted of 36 open-ended questions. Of those, 16 questions were designed for the parents of normally developed children and 20 questions were for the parents of autistic and mentally retarded children.

Play Skills Assessment Scale

In this research, Play Skills Assessment Scale was also used to gather information about the children's play skills. The reliability and validity of the scale was conducted by Fazlioglu et al. (2013). The sample of the scale study was composed of the mothers and fathers of the six-year-old (60-72 months) 243 children studying at kindergartens in Edirne in 2011-2012 academic year. "Play Skills Assessment Scale was designed to assess the play skills of six-year-old autistic, mentally retarded and normally developed children. The scale consisted of 27 items with five points Likert Scale: totally agree (1), not agree (2), not sure (3), agree (4), totally disagree (5). EFA (explanatory factor analysis) and CFA (confirmative factor analysis) analysis were used for the validity analyses of the scale. In the light of the literature on this subject, Exploratory Factor Analysis (EFA) was used and it was statistically suitable. The analysis results confirmed the construct validity of the scale. At the same time, Cronbach alpha reliability co-efficiency was .93; thus such a high rate proves the reliability of the scale (Fazlioglu et al., 2013).

Data analysis

Prior to the research, required ethical permissions were obtained from the official institutions. The participation of the mothers was on voluntary basis. The analysis of the data gathered through the scales used in the research was evaluated based on $p < 0.05$ significance level. For data analysis, SPSS 17.0 program was used. To analyze the data, statistical arithmetic mean, standard deviation, independent variable t test, samples one-way analysis of variance (one-way ANOVA), two way analysis of variance, and Scheffer test analysis were used.

RESULTS

One-way Variance Analysis was used to see whether there was a significant difference between the play skills of autistic, mentally retarded and normally developed children, and the source of the difference was investigated by using Scheffer test. The results are displayed in Table 1.

As displayed in Table 1, total mean scores of autistic, mentally retarded and normally developed children on play skills assessment scale were examined. It was certified that the mean score of autistic children is $M=79.98$; mentally retarded children, $M=81.16$ and normally developed ones, $M=118.52$.

When these means are compared, it is seen that the play skill mean scores of normally developed children are much higher than that of autistic children. The difference between these mean scores was found out to be statistically significant [$F(2-147)=70,44$, $p < 0.05$]. When the play skill mean score of mentally retarded children and autistic children was compared, it was found that the

mean score of mentally retarded children was higher than that of autistic children. When the difference between the scores was analyzed, the difference was not significant [$F(2-147)=70,44$, $p > 0.05$]. Also, when the play skill mean scores of mentally retarded children and normally developed children was compared, it was seen that mean score of normally developed children was higher than that of mentally retarded children. The difference between the two group's mean score was statistically significant [$F(2-147)=70,44$, $p < 0.05$]. As can be seen in Table 1, the play skills of normally developed children are higher than the play skills of autistic and mentally retarded children.

In the study, the effects of the education levels of the parents of autistic, mentally retarded and normally developed children on the children's play skill were also checked. The results are displayed in Table 2.

As seen in Table 2, the effect of the educational level of the parents of autistic, mentally retarded and normally developed children on play skills was not significant [$F(8-141)=1.24$, $p > .05$]. Based on these results, it was concluded that the educational level of the parents of autistic, mentally retarded and normally developed children has no effect on play skills of children.

As seen in Table 3, the effect of the jobs of the parents of the autistic, mentally retarded and normally developed children on play skills has not been found significant [$F(13-136)=1.24$, $p > .05$]. According to these results, it is concluded that the jobs of the parents of autistic, mentally retarded and normally developed children have no effect on play skills of children.

Table 4 shows that the effect of the number of the siblings of autistic, mentally retarded and normally developed children' parents on play skills has not been found significant [$F(5-144)=,09$, $p > .05$]. According to these results, it was concluded that the number of the children of autistic, mentally retarded and normally developed children's have no effect on play skills of children.

Table 5 reveals that group studies and preschool attendance combined effect on play skills are not found to be significant for children with autism, mentally retarded or children showing typical development [$F_{(3-138)} = 0.389$; $p > 0.05$]. However, the group parameter alone has a significant effect on play skills [$F_{(2-138)} = 38,923$; $p < 0.001$]. The scheffe test used to distinguish differences among the groups showed that mean value ($M=118,520$) of typically developed children's play skills is higher than the mean value ($M=79,468$) of autistic and mentally retarded children's ($M=81,163$) play skills. Similarly, preschool education has a significant effect on children's play skills [$F_{(2-138)} = 5,041$; $p < 0.05$]. The scheffe test results showed that the play skills score of children without preschool education ($M=74,000$) is less than the scores of the children with one ($M = 106,896$) and two years ($M= 97,241$) preschool education. Surprisingly, the mean value of ($M=106,896$) play skills of children who have not attended pre-schools for one year is higher than

Table 1. The comparison of the Play Skill Scale Scores of Autistic, Mentally Retarded and Normally Developed Children

| | Normal (n=50) | Autistic (n=51) | Mentally Retarded (n=49) | P |
|-------------------------------|------------------|--------------------|-----------------------------|-------|
| Play Skill Scale Score | 118,5±11,8 | 79,9±19,3* | 81,1±22,6* | 0.000 |

*p<0.001 compared with normal

Table 2. The Effect of Educational Level of the Parents of Autistic, Mentally Retarded and Normally Developed Children on Play Skills

| | Mother Education Level | Group | N | M | Sd | df | F | P |
|-------------------------|------------------------|-------------------|----|--------|-------|-------|-------|------|
| Play Skill Scale | Primary School | Normal | 8 | 118,87 | 15,84 | 8-141 | 1,240 | ,280 |
| | | Autistic | 24 | 80,75 | 21,04 | | | |
| | | Mentally Retarded | 29 | 78,82 | 22,19 | | | |
| | | Total | 61 | 84,83 | 24,64 | | | |
| | High School | Normal | 16 | 116,25 | 10,94 | | | |
| | | Autistic | 21 | 76,04 | 14,84 | | | |
| | | Mentally Retarded | 15 | 87,93 | 20,61 | | | |
| | | Total | 52 | 91,84 | 23,07 | | | |
| | University/College | Normal | 26 | 119,80 | 11,21 | | | |
| | | Autistic | 6 | 90,66 | 24,57 | | | |
| | | Mentally Retarded | 5 | 74,40 | 31,10 | | | |
| | | Total | 37 | 108,94 | 24,19 | | | |

*p<0.05

Table 3. The Effect of the Jobs of the Parents of Autistic, Mentally Retarded and Normally Developed Children on Play Skills

| | Group | JOB | N | M | Sd | df | F | P |
|------------|-------------------|---------------|----|--------|-------|--------|-------|------|
| PSS | Normal | Officer | 3 | 122,66 | 7,57 | 13-136 | 1,240 | ,280 |
| | | Self-employed | 23 | 119,69 | 12,01 | | | |
| | | Housewife | 8 | 117,50 | 12,62 | | | |
| | | Total | 50 | 118,52 | 11,80 | | | |
| | Autistic | Officer | 3 | 85,66 | 9,01 | | | |
| | | Teacher | 3 | 71,66 | 9,23 | | | |
| | | Worker | 9 | 82,55 | 20,32 | | | |
| | | Self-employed | 5 | 84,80 | 28,66 | | | |
| | Mentally retarded | Housewife | 31 | 78,70 | 19,30 | | | |
| | | Total | 51 | 79,98 | 19,30 | | | |
| | | Officer | 2 | 78,00 | 12,72 | | | |
| | | Worker | 7 | 86,00 | 29,82 | | | |
| | | Self-employed | 4 | 56,00 | 5,83 | | | |

the mean value of (M=97,241) play skills of children who have not attended pre-schools for two years; this shows that the children with one-year preschool education scored better compared to the children with two-years preschool education.

DISCUSSION

In a general view, it is accepted that children with autism, mentally retarded, and normal children all display different behaviors in play skills. In this research study, such

Table 4. The Effect of the Number of the Siblings of Autistic, Mentally Retarded and Normally Developed Children's on Play Skills

| | Group | Number of Children | N | M | Sd | df | F | P |
|-------------------|-------------------|----------------------------|----|--------|-------|-------|------|------|
| Play Skills Scale | Normal | I have only one child | 23 | 120,65 | 10,72 | 5-144 | ,090 | ,910 |
| | | I have more than one child | 27 | 116,70 | 12,55 | | | |
| | | Total | 50 | 118,52 | 11,80 | | | |
| | Autistic | I have only one child | 23 | 82,43 | 18,61 | | | |
| | | I have more than one child | 28 | 77,96 | 19,96 | | | |
| | | Total | 51 | 79,98 | 19,30 | | | |
| | Mentally Retarded | I have only one child | 18 | 85,55 | 25,15 | | | |
| | | I have more than one child | 31 | 78,61 | 21,12 | | | |
| | | Total | 49 | 81,16 | 22,68 | | | |

*p<0.05

Table 5. Effect of duration of preschool attendance on play skills of autistic, mentally retarded and typical developing children

| Group | Preschool Years | N | M | SD |
|-----------------|-----------------|-----|---------|---------|
| Typical | 1 | 30 | 12,099 | 120,567 |
| | 2 | 20 | 10,918 | 115,450 |
| | Total | 50 | 118,520 | 11,801 |
| Autistic | 0 | 17 | 71,294 | 16,289 |
| | 1 | 9 | 82,000 | 18,742 |
| | 2 | 21 | 85,000 | 21,014 |
| | Total | 47 | 79,468 | 19,629 |
| Mental Retarded | 0 | 27 | 75,704 | 23,439 |
| | 1 | 9 | 86,222 | 12,468 |
| | 2 | 13 | 89,000 | 24,718 |
| | Total | 49 | 81,163 | 22,681 |
| Total | 0 | 44 | 74,000 | 20,872 |
| | 1 | 48 | 106,896 | 22,280 |
| | 2 | 54 | 97,241 | 23,428 |
| | Total | 146 | 93,411 | 25,898 |

| Source of Variance | Sum of Squares | df | Mean Square | F | p | Significant Value |
|-----------------------------|----------------|-----|-------------|--------|------|-------------------|
| Group | 25529,779 | 2 | 12764,889 | 38,923 | ,000 | N-O, N-Z |
| Pre school education | 3306,431 | 2 | 1653,216 | 5,041 | ,008 | No,1-2 |
| Group* Pre school education | 382,768 | 3 | 127,589 | ,389 | ,761 | 1-2 |
| Error | 45257,031 | 138 | 327,950 | | | |
| Total | 1371190,000 | 146 | | | | |

differences were analyzed from the parents' perspectives. The findings of the present study revealed that the children with autism had lower levels than the mentally retarded and normal children (Table 1). In other words, in line with the literature, the findings of this study show that autistic children are less skilled than normally developed children in pretend and cooperative plays (Tilton and Ottinger 1964; Stahmer, 2006; Dykstra et al. 2012). Nor-

mal children easily engage in solitary and social plays. Although mentally retarded children also engage in plays, their engagement is slower than the normal children due to the language and communication difficulties they face. On the other hand, the stereotypic behaviors or focusing on a single object affect the functional play skills of autistic children negatively. Additionally, posture and gait abnormalities also hinder their participation in locomotor

plays. Lack of eye contact, ambiguous gestures and mimics, and insufficient imitation abilities of autistic children also delay and create difficulties for participating in the plays. Therefore, from the early childhood, such children need to be encouraged to participate in plays with their peers (Jung et al., 2012).

In line with this study, Libby et al. (1998) investigated the engagement of autistic children into spontaneous play by comparing the behaviors of the children with Down syndrome, with autism, and normal children, and they determined that the children with autism had insufficient abilities in play skills. In another study, Wulf (1985) compared the play skills of the autistic children in free play time with the normal children and found out that autistic children tended to stereotypical body movements when they became free instead of creating or engaging in plays by ignoring the play materials. The parents of the autistic children in the present study also declared such similar statements about their children. In another study which displayed consistent results with the present study, Thiemann et al. (2012) compared 35 preschool autistic children with 35 preschool children with other development problems and determined significant differences in play skills between those two groups, and the study concluded that autistic children tended to engage in more conventional plays.

Another significant finding of the present study is that no significant difference was between the children's degree of play skills and their mothers' education level and occupation positions (Tables 2 and 3). When such an outcome was compared with the findings in the literature, it can be clearly stated that parent-child interaction, rather than parents' education level or occupation, has a significant role on children's play skills development. It is a common view that parents are the first teachers of their children who support language and social-emotional development (Hart and Risley, 1985). In other words, children's play and social development are affected by the interaction styles of parents rather than parents' jobs or education background. From the very early childhood, parents involving in plays and being a part of a game will be very influential on children's play skills. Responding of parents to requests of children for social interaction is highly important. Both physical (touching, petting etc.) and verbal (speaking) responses help babies keep more attention time. Playing games with children help increase satisfaction and affect children's development positively (Culbertson et al., 2003; Zuckerman and Frank, 1992).

Some parents of mentally retarded children may have hesitations while interacting and communicating with their children due to the mental problems of such children. Sometimes the physical or mental difficulties or limitations of the children may cause such hesitations. As a result of poor interaction, those children may display lacking play skills. Pimentel and Meneres (2003) emphasize that there are differences in communication between the mothers who have children with down-syndrome and

those mothers who have normal children. They infer from the study that some mothers are too directive and they do not care about their children's needs while others start interactions; but the latter are not able to continue to give their children attention. Communication styles of children's family structure may be effective on both play skills and social-emotional development. In the family where children show the first play behaviors, if they are not responded to, then the ability to start communication may not be enough.

In this present study, no significant difference was between the variables about number of siblings and the children's lacking play skills (Table 4). However, in the relevant literature it is claimed that the number of siblings affects the play skills of mentally retarded children (Oppenheim-Leaf et al., 2012) and it is accepted that during the very early childhood period, siblings are constant resource of friends. Siblings experience the first and the most intense peer relationship in the family. This special peer relationship builds up the first step of socializing. Siblings learn to share toys, clothes, rooms, secrets as well as experiencing many abilities. The experience of playing games has vital importance among these abilities. Children who have brothers or sisters may be more equipped and active in both social and play skills than those who do not have any. However, having a handicapped child or being handicapped may cause limits in mutual interaction. Thus, as the siblings do not know how to interact, they cannot play games and avoid interacting (Michael and Marian 2002; Ahmetoğlu and Aral 2004; Oppenheim-Leaf et al., 2012).

As seen in Table 5, the more children continue to study in preschools, the more they have play skills. Effect of preschool on play skills of disabled children (autisms and mentally retarded) and children with typical development was not found very significant in this study [$F_{(3-138)}=,389$; $p>.05$]. The mean value ($M=74,000$) of play skills of children who have not attended preschool education was found to be lower than the mean value of play skills of children who have not attended pre-schools for one ($M=106,896$) and two years ($M=97,241$).

This change is not accepted as significant, though. In terms of their development, it is important to study in kindergartens for both normally developed children and differently developed children. Behaviors and attitudes of teachers play an important role in supporting social development at school. During early childhood education, class teachers in pre-school classes should support children's inquisitive and sociable behaviors and should give children opportunity to communicate with peers and to involve in different plays. On the other hand, early childhood education period is the time when children experience the first exclusion and isolation from plays. For that reason, creating chance to experience social communications successfully is vital (Wulf, 1985; Sanemoğlu, 2005). Involvement in a social group is the experience that all children in the world always get.

Especially, because children are in different socio-economic class in society or being handicapped prevents different peers from being accepted by popular children (Thiemann-Baurge, 2012). As in different countries in the USA and Europe, although integration (mainstreaming) practices also continue in Turkey, unfortunately handicapped children are still invisible and continue to have problems about actively participating in socialization in class. If the child especially has a different disability, the situation mentioned above is often experienced. The teacher has a vital role in supporting a handicapped child to socialize with peers. If teachers support the cooperation between the handicapped children and normally developed children among peer groups, it will have positive effect on their play skills. However, the difficulties in different integration classes, even if handicapped children continue to be students, prevent them from using the advantages of school atmosphere (Smith-D'Arezzo and Thomas, 2010).

From the result of the research, it can be concluded that the play skills of autistic and mentally retarded children are more deficient than the play skills of normally developed children. It should not be forgotten that to remove this deficiency, autistic and mentally retarded children need to play more. It should be made sure that autistic and mentally retarded children play in the same place with normally developed children. This will be beneficial both for disabled and normal children. When disabled individual plays in the same place with normal children, he will have the opportunity to imitate normal children and develop play skills. When normally developed children play with disabled children, they will establish empathy with the disabled ones, learn to help each other, learn to be fair towards weaker individuals and this way they will be aware of the existence of disabled individuals.

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