

A Comparison between the Effectiveness of Game Therapy and Emotional Intelligence Training on Social Compatibility and Communicative Skills of Exceptional Primary School Hyperactive and Deaf Children

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Abstract

Background

In order to enhance social adaptability and communication skills of exceptional children, researchers are trying to find a more effective and reliable approach. The present study aimed to compare the effectiveness of Game Therapy and Emotional Intelligence Education on the social compatibility and communicative skills of hyperactive and deaf children.

Materials and Methods

The population of this study included all the deaf and hyperactive students of the exceptional elementary school in Sari, Iran, in the school months of June to January 2017. The sample included 50 participants selected through cluster random sampling and divided into 2 experimental and control groups of deaf children each with 10 members and 2 experimental and control groups of hyperactive children each with 15 members. Inactive controls were placed. The instrumentation was Rutter Children's (Teacher's Form) Behavioral Questionnaire, Social Skills Rating by Teachers Scale, Game Therapy Intervention method for 12 sessions, and Emotional Intelligence Training for 8 sessions each lasting 1 hour on all male and female members of both groups. In order to compare the effectiveness, covariance analysis and t-test were administered and analyzed by SPSS version 23.0 software.

Results: The findings of this study indicated that 12 sessions of game therapy and 8 sessions of emotional intelligence training significantly affect social compatibility and communicative skills of hyperactive and deaf students ($P < 0.05$).

Conclusion

According to the results, the effectiveness of Game Therapy and Emotional Intelligence Training was higher on social compatibility and communicative skills of hyperactive children than the deaf children.

Key Words: Deaf Children, Game Therapy, Emotional Intelligence Training, Social Compatibility.

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1- INTRODUCTION

Today, Attention-Deficit Hyperactivity Disorder (ADHD) is a concern for psychiatrists, psychologists, parents, and teachers (1). According to DSM-5 approach, diagnosis is made by confirming the existence of multiple signs of negligence of impulsive hyperactivity or both and is divided into three secondary types of often negligent, often hyperactive – impulsive, and compound (2). ADHD is often accompanied by other disorders such as learning disorders, anxiety disorders, mood disorders, and disruptive behavior disorders (3). Although various therapeutic methods have emerged in the past three decades for confronting the symptoms of ADHD (4), a unique therapeutic approach has not yet been devised for optimal treatment of this disorder (5).

Given the fact that social and emotional skills are learned through communication with others and most of such skills are gained by sufficient sense and power including hearing, deaf people fail to gain these experiences due to their hearing impairment. These experiences can strongly affect deaf people's emotional growth and social interaction (6). Deafness is a type of sensory-nervous disorder that afflicts more than 120 million people around the world (7). Due to physical inability and the resulting deprivation, children with hearing impairment are often unable to establish social and interpersonal relationships with their peers and adults and they have difficulty achieving emotional adaptability and social skills (8).

A great amount of research has shown that children with ADHD have more problems in social relationships with their peers and parents than children without this disorder (9,10). Behavioral observation methods in play and controlled situations have shown that children with ADHD show more hostile and aggressive behaviors than children without this disorder (11). The first and most important obstacle to social

relationships in children with ADHD is the main characteristics of attention-deficit hyperactivity disorder, excessive action, and impulsivity in them. The problems of attention in these children make them unable to succeed in following conversations and understanding social clues (12). Some of these children are insensible during game activities or interactions with their peers and are not excited during the game (13). Another common concern in people with attention-deficit hyperactivity disorder is emotional regulation problems. Children and teenagers with this disorder face difficulties in interpreting facial expressions and speech intention (14).

The important point is that the problems of these children in emotional manifestations of face are not generalized to the recognition of non-emotional information (15). Social compatibility involves an individual's adapting to his or her social environment. This adaptation may be achieved by changing oneself or the environment(16). In general, adaptability is defined as the ability to mix, adapt to, compromise, cooperate, and get away with oneself, the environment, and others (17).

Social compatibility, as the most important indicator of mental health, is one of the subjects that sociologists, psychologists and instructors in particular have paid particular attention to in recent decades (18). Adaptation refers to an individual's ability to adapt to the surrounding environment (19). Adaptation can be addressed in a variety of areas and include social, familial, emotional, educational, and other dimensions. Based on the learning approach, adaptation is a set of learned behaviors, and inconsistency occurs when an individual has not learnt the skills necessary to adapt to everyday life problems (20). Individuals can involve in interpersonal interactions and communication processes through communicative skills, i.e. the process in

which individuals share information, thoughts, and feelings through verbal and nonverbal exchanges (21). Communicative skills are essential methods for a healthy and productive life. These skills are a set of abilities that enable us to adapt to others and they can develop positive and beneficial behaviors. These abilities enable us to play our proper role in society without harming ourselves or others. One of the other communicative skills is the ability to listen actively, which has always been a concern in interpersonal relationships. This skill is a kind of active participation in a conversation; an activity that helps the speaker to transfer his meaning (22). Emotional intelligence is a set of skills, talents and non-cognitive abilities that increase the ability of a person to succeed in coping with pressures and environmental constraints (23,24).

Emotional intelligence covers individual differences in individual emotional capabilities (stress control), and interpersonal (stress perception) (25). It seems necessary to promote the self-esteem of the hearing impaired for providing educational services such as emotional intelligence training because emotional intelligence, unlike cognitive intelligence, is not a permanent and unchangeable ability and can be enhanced through special training (26,27). Game Therapyd escribed as a dynamic interpersonal relationship between the child and a trained therapist that facilitates the development of a safe communication for the child so that the child can fully express himself (28).

Having a disability or sensory impairment is one of the conditions that make people feel lonely and frustrated. Hearing impairment is one of the most important sensory defects in which one's mental processes are affected and mental health of deaf children is more at risk. In their studies on the deaf, Faramarzi et al (2015) have found that deaf people may look

more cognizant of visual symptoms and they may look insolent and skeptical and become more secluded (29). According to what mentioned, we now seek to answer this question: Is the effectiveness of game therapy on communicative skills, emotional intelligence training on communicative skills, and game therapy on social compatibility, emotional intelligence training on social compatibility of hyperactive and deaf children different?

Thus, the present study aimed at comparing the effectiveness of game therapy and emotional intelligence education on the social compatibility and communicative skills of hyperactive and deaf children.

2- MATERIALS AND METHODS

2-1. Design and Population

The present quantitative study was of survey type. It was intended to be practical in terms of purpose, experimental in terms of nature and semi-experimental of pre-test and post-test type with control group in terms of research method. The population of this study includes all the deaf and hyperactive students of exceptional elementary schools in Sari, Mazandaran, Iran during the school months of June to January 2017. According to the statistics of Sari Department of Education, this number involves twenty deaf and fifty hyperactive students.

2-2. Methods

The sample of this study includes fifty participants. A cluster random sampling method was used to select the participants in a way that two primary schools in Sari were selected and their deaf and hyperactive students were selected as the sample of this study. Due to the limited sample selection of deaf students, the entire selected community was involved in the research. The deaf sample included 20 participants from which 10 participants

were selected as the experimental group participants and 10 as the control group participants. The hyperactive sample included 50 participants from which 15 were selected as the experimental group participants and 15 as the control group participants.

2-3. Instrumentation: Validity and Reliability

The instrument used for data collection in this study was a questionnaire consisting of three sections as follows:

A: Demographic Questions

The questions in this section attempt to collect general and demographic data about the participants such as gender, level of education, age, and other characteristics.

B: Children's Rutter Behavioral Questionnaire (Teacher's Form) (30)

This questionnaire was prepared by Michael Rutter et al. in 1967 and consists of two forms of A (Parent's Form) completed by parents and B (Teacher's Form) including 26 very simple phrases filled out by the teacher (30). It is one of the most common questionnaires to diagnose childhood mental illnesses filled by teachers. In this study, only the Rutter questionnaire Form B used by Mehryar et al. (1989) to evaluate Iranian children (Shiraz, Iran) was applied. This corrected questionnaire consists of 30 items, of which 26 were extracted straight from the Rutter questionnaire. In 1982, Mahryar et al. turned Rutter's questionnaire into a 30-item questionnaire by including 6 new items according to Iranian culture and converted 4 articles into 2 articles due to similarity. The questionnaire has been revised (31). So far, there have been numerous studies in Iran and other countries concerning the reliability and validity of the Rutter questionnaire, with the majority showing a high degree of confidence in this regard. Regarding reliability or validity, Rutter et al (1975),

by turning the Rutter questionnaire into two halves, reported a reliability of 89% at a significance level of 0.001, and the same researchers reported a reliability of 85% through retesting 91 participants for 13 weeks (32). Farideh Yoosefi (1998) studied 1600 girls and boys of 6 to 11 years old in the city of Shiraz studying in the first to fifth grades of elementary school in order to assess the validity and reliability of the Rutter test (a 30-item form). In this study, the reliability of the test was reported to be 0.90 using the retest method (33).

C: Social Skills Rating By Teachers Scale (34)

It is a test of 56 items used for assessing various aspects of effective communication in childhood. It is composed of three subscales of social inadequacy (30 items), social skills (30 items), and relationship with peers (15 items). Structural validity was checked and confirmed by factor analysis method; 777 content analyses of phrases related to the lack of social skills sub-scale indicated that this scale evaluates failure in social activities and assesses the reasons for this failure. The reliability of the retest of the social skills subscale has also been reported to be 0.91. The Cronbach's alpha coefficient in the subscale of social inadequacy was reported to be 0.89 in the sample group of 1,226 participants. The Cronbach's alpha coefficient in the subscale of non-social skills was reported to be 0.81 (34).

Zare and Ehteshamzadeh (2016) (35) investigated social skills of pre-school children in Iran. They selected 200 children (114 boys and 86 girls), and used the scale of social skills grading by the teachers of Truscott (1989). The reliability of 0.88 was reported at the significance level ($P<0.000$). Other studies have also indicated the reliability of this questionnaire. Quoting them The findings of the study conducted to assess the

validity of children's personality test (35) have shown that this scale distinguishes between six groups of delinquent children, hyperactive children, children with cerebral palsy, children with physical impairment, children with mental retardation, and children with psychosis (35).

2-4. Intervention

Game therapy techniques were for 12 sessions and emotional intelligence training were performed by the first researcher for 8 sessions, two sessions of 1 hour per week on all male and female participants of the two experimental groups consisting of 15 hyperactive samples with attention-deficit disorder and 10 deaf samples. The tools and techniques used for all subjects were the same.

2-4-1. Game Therapy Protocol

Table-1: Game Therapy Sessions in participant

Row	Session	Training	Methods and tools
1	First and second	Communication	Simple games can be used to communicate with the child.
2	Third, fourth, and fifth	Active Oral Memory	Examples are hearing and coding, multi-number matching with the sound of certain animals, seeing and saying, etc.
3	Sixth	Oral Stage Inhibition	Illustrated stories, hopping as reciting a poem, playing cards, and placing three different bells on the wall with the child going next to the desired bell on the therapist's call and doing two special moves.
4	Seventh	Dynamic Stage Inhibition	The game of letter cards (word formation). The child has to pass the specified path marked on the cards and remove the image said by the therapist and perform a particular movement.
5	Eighth	Paper and Pen Stage Inhibition	For hyperactive children who are able to read and write, paper and pen games are the best activities. These activities include separating converse writing, finding a certain figure from among various tangled figures, comparing different images as well as mentioning its similarities.
6	Ninth and tenth	Cognitive Problem Solving	Games such as puzzle-making and scenario making about things that have happened to them. (This technique is the most important and practical tool for problem solving (hypothesis problem design - correct answer selection).
7	Eleventh and twelfth	Schedule	<ol style="list-style-type: none"> 1. Doing one task in five minutes. 2. Describing the time they get up until the time they go to school in the form of writing. 3. Sorting the activity cards of everyday life. <p>At the end of the proposed activities, the therapist will teach the real timing.</p>

Game therapy approach which lasted 12 sessions (**Table.1**), was conducted to compare the effectiveness of the two groups of hyperactive and deaf children. In this therapeutic approach, game therapy techniques for active memory, behavioral inhibition and cognitive problem solving are performed on hyperactive and deaf children. For more precise implementation of these techniques, the approach used by Dr. Sayed Mohsen Asghari Nekah in his study to evaluate the effect of game therapy based on functional neurological performance on improving the ability to inhibit response, planning, and working memory of children with attention-deficit hyperactivity disorder (ADHD) in 2014 in Mashhad was used to perform this approach (36).

2-4-2. Emotional Intelligence Training Protocol

Emotional training techniques (self-regulation of excitement - controlling your excitement and empathy with the excitement of others) were performed in 8 sessions (**Table.2**). This approach was taken from Safi's study (2015) entitled "The effectiveness of curative games on self-control, behavior and hyperactivity signs on ADHD children" in which a training package that is a product of Chadram's therapeutic games licensed to produce and register toy from the Toy Supervision Council of Iran's Children and

Youth Center was used to train the subjects in 8 sessions (37). Also, Kazemi et al. (2016) in a research entitled "The Effectiveness of Anger Management Games on Behavioral and Anger Symptoms of Children with Hyperactivity / Attention Deficit Disorder" used these techniques and argued that this game package had an impact on children with attention-deficit hyperactive children. They recommended the use of these games as new methods of assistance because of ease of use for children and the low cost (38).

Table-2: Emotional Intelligence Training Sessions

Stages	Session	Tools
Understanding emotions (Emotional Self-awareness).	First	1.Using the book "Your Emotions" (getting to know all the emotions) 2. Cube of Emotions 3. Creating facial craftwork 4. Storytelling along with expressing emotions 5. Watching emotional activities of yours and others' in front of the mirror Using puppet to recognize emotions
Controlling your emotions	Second	Keys for anger and self-control
	Third	Calmness and cycle of emotions
	Fourth	Responsibility and compliance competitions
Empathy with emotions of others	Fifth	You broke my heart.
	Sixth	I'm self-confident.
	Seventh	Be your instructor just in time.
	Eighth	Helping others, Can I play?

2-5. Ethical Considerations

The present study was approved by the Ethics Committee of the biomedical research of Islamic Azad University, Sari Branch of Iran, with the code of ethics "IR.IAU.SARI.REC.1396.58". In addition, the objectives of this study were explained to the participants' parents and teachers in a briefing and they became aware of the voluntary nature and confidentiality of the information.

2-6. Inclusion Criteria

Definitive diagnosis of hyperactivity and deafness in the participants and because of the limitations in the number of participants' gender and age were not the

criteria. It was only necessary to study in the exceptional primary school, as well as to provide written consent from parents and teachers of the participants. These were the criteria of this study.

2-7. Exclusion Criteria

Suffering of the members of the sample group from severe illnesses and their simultaneous use of similar training courses were the exit criteria of this study.

2-8. Data Analysis

In order to investigate the effectiveness of game therapy and emotional intelligence training on social compatibility and communicative skills of hyperactive and deaf children, first, the Kolmogorov-

Smirnov test was administered to determine normal or abnormal distribution of scores. Then, the Loon and ANCOVA test were used to examine the homogeneity of variances in the groups. Also, in order to compare the effectiveness of game therapy and emotional intelligence training on social compatibility and communicative skills of hyperactive and deaf children, t-test was used for independent groups through IBM SPSS Statistics Version 23 and in all the analyses $P<0.05$ was considered statistically significant.

3- RESULTS

In order to determine the normality of the scores concerning the effectiveness of game therapy and emotional intelligence training on hyperactive and deaf samples in each of the pre-test and post-test stages and in the experimental and control groups, the Kolmogorov-Smirnov test was used. On this basis, the results of data analysis show that the acquired scores for social compatibility and communicative skills are normally distributed. Therefore, one of the conditions for using the above mentioned tests is met, because the variables are distributed normally. To determine the homogeneity of the variances (equality of variance error) related to the scores of the effectiveness of game therapy and emotional intelligence training on the hyperactive and deaf samples, the Loon test (variance

homogeneity test) was used. Accordingly, the results of data analysis indicate that the homogeneity of the variance is confirmed by the data. Therefore, equality of variances in the groups under study shows that the samples are normally distributed into the groups and the conditions for using the parametric tests of covariance analysis and t-test for independent groups are met. Descriptive statistics (frequency, frequency percentage, mean, standard deviation) and inferential statistics (covariance analysis and T test) were used to test the hypotheses. The results of data analysis showed that at the confidence level of 95% ($\alpha = 0.05$), since ($P\text{-value}=0.0001$) is smaller than the predicted error ($\alpha = 0.05$), the research hypotheses (H_1) was accepted. It will be further presented in more detail. A summary of the results of data analysis indicated that there is a significant difference between the effect of game therapy on the communicative skills of hyperactive and deaf children. Consequently, based on the fact that the average score of communicative skills of hyperactive children (0.84) is higher than the mean scores of communicative skills of deaf children (0.78), therefore, with 95% confidence, it can be said that the effect of game therapy is more on hyperactive children's communicative skills than children with hearing impairment (**Table 3**).

Table 3: Comparison of the effect of game therapy on the communicative skills of hyperactive and hearing impaired children

Group	Number of samples	Sample average	Standard deviation	T statistics	Degree of freedom	Significance level
Hyperactive	30	0.84	0.05	3.75	48	0.0001
Deaf	20	0.78	0.05			

A summary of the results of data analysis indicated that there is a significant difference between the effects of emotional intelligence training on the communicative skills of hyperactive and

hearing impaired children. Consequently, based on the fact that the mean scores of communicative skills of hyperactive children (0.83) are higher than the mean scores of communicative skills of hearing

impaired children (0.78), therefore, with 95% confidence, it can be said that the effect of emotional intelligence training is more on communicative skills of

hyperactive children than communicative skills of hearing children with hearing impairment (**Table.4**).

Table-4: Comparison of the effect of emotional intelligence training on communicative skills of hyperactive and deaf children

Group	Number of samples	Sample average	Standard deviation	T statistics	Degree of freedom	Significance level
Hyperactive	30	0.83	0.05	3.72	48	0.001
Deaf	20	0.78	0.04			

A summary of the results of data analysis indicated that there is a significant difference between the effect of game therapy on the social compatibility of hyperactive and hearing impaired children. Consequently, based on the fact that the average scores of social compatibility of children with hyperactivity (0.11) are

lower than the mean scores of social compatibility of children with hearing impairment (0.20), therefore, with 95% confidence, it can be said that the effect of game therapy is more on hyperactive children's social compatibility than hearing impaired children's social compatibility (**Table.5**).

Table-5: Comparison of the effect of game therapy on the social compatibility of hyperactive and hearing impaired children

Group	Number of samples	Sample average	Standard deviation	T statistics	Degree of freedom	Significance level
Hyperactive	30	0.11	0.05	5.57	48	0.0001
Deaf	20	0.20	0.07			

A summary of the results of data analysis indicated that there is a significant difference between the effect of emotional intelligence training on the social compatibility of hyperactive and hearing impaired children. Consequently, based on the fact that the mean scores of social compatibility of hyperactive children (12.0) are lower than the mean scores of

social compatibility of children with hearing impairment (0.22), it can be concluded with 95% confidence that the effect of emotional intelligence training is more on social compatibility of hyperactive children than social compatibility of hearing impaired children (**Table.6**).

Table-6: Comparison of the effect of emotional intelligence training on the social compatibility of hyperactive and hearing impaired children

Group	Number of samples	Sample average	Standard deviation	T statistics	Degree of freedom	Significance level
Hyperactive	30	0.12	0.05	6.82	48	0.0001
Deaf	20	0.22	0.06			

4- DISCUSSION

The game is one of the most important alternatives to substitute coexistence. Therefore, game therapy is one of the treatments that, by encouraging spontaneity, provides an opportunity for all children, especially children with deficits and problems such as hyperactivity, lack of attention or deafness, to express their feelings freely and use symbols to compensate for their problems in reality and find suitable solutions for them and use games to compensate for situations that they may face (39). Game therapy allows all children including attention-deficit hyperactive children and deaf children to acquire new skills, train them, and improve them. Studies have shown that game contributes to increasing attention, memory, logical reasoning, language, imagination, creativity, and innovativeness of children, and enables them to become aware of other people's points of view by communicating with them. In addition, cognitive development increases self-awareness, self-confidence and self-reliance of children, which are all effective in developing communicative skills (40).

Emotional Intelligence training enables children, whether healthy, deaf or attention-deficit hyperactive, to immediately use their knowledge in different situations to ensure their success. On the one hand, the results of many studies show that emotional intelligence, contrary to cognitive intelligence, is not a constant and invigorating ability, but it can be enhanced and changed, and through special training it can increase its level and improve its quantitative and qualitative level (41). Communicative skills include skills such as listening, ordering emotions, understanding verbal and nonverbal messages, insight into the process of communication and determination. Emotional intelligence training plays an important role in the formation, expansion

and continuation of human interaction. In general, one of the key factors in emotional intelligence is how and when a person can use communicative strategies (42). In line with the findings of the research on higher effectiveness of game therapy on communicative skills of hyperactive children than deaf children (**Table.3**), children with ADHD show the lowest levels of social exclusion and have more problems in friend finding and maintaining friendships. In general, children with this disorder experience many social problems in different situations (43). Social secretion has also been reported higher in these children, although the effect size has not been high and may vary depending on different disorder types (44). Research has shown that many children who have problems in establishing social communication due to lack of required communicative skills are exposed to a set of negative consequences.

These skills are so important that their failure is characterized by loneliness, social anxiety, depression, low self-esteem, and job and academic failure. In their investigations of the previous research, Sarihi et al found out that non-pharmacological interventions, such as psychotherapy and counseling for children, using promising methods, make for a significant percentage of children, because if the verbal language does not suffice to express children's thoughts and feelings, therapists can use game therapies to help children express what they are upset about (45). Also, in a review of 81 experimental studies on game therapy, Jalali et al. (2014) concluded that game therapy has shown effective results in self-concept, behavioral changes, ability to identify social skills and anxiety (46). In line with the findings of the research on higher effectiveness of emotional intelligence training on communicative skills of hypertensive children than deaf children (**Table.4**), according to the results and

research findings, in children with attention-deficit hyperactivity disorder, emotional disturbances resulting from non-controlling behavior and aggression is evident. By teaching emotional intelligence, communicative skills such as the ability to communicate effectively and efficiently with others and a person's confidence in establishing an appropriate relationship will improve, his talents will appear and attract the respect and appreciation of others (47). The difference in the social function of children with attention-deficit hyperactivity disorder and children without this disorder based on the scales of skill grading in studies using social-group methods are almost a standard deviation. A survey by peers has shown that these children are highly rejected by peers and are less liked by them (48). Therefore, emotional intelligence training increases the communicative social skills of children with hyperactivity. By developing emotional intelligence, children with attention-deficit hyperactivity will be more able to use problem solving skills. It will increase their cognitive abilities and lead to increased compliance with situations having serious risk factors (49).

In line with the findings of the research on higher effectiveness of game therapy on social compatibility of hyperactive children than deaf children (**Table.5**), Doppl and Vainet (2006) believe that interventions based on social skills are not very useful for children with attention-deficit hyperactivity disorder, since children with attention-deficit hyperactivity disorder do not lack social skills, but they are impulsive and fail to think about the consequences of their behavior. Therefore, experts have found game therapy effective in the development of externalized behavioral problems such as struggle and internalized problems such as child morbidity (50). Formulating a more positive self-concept, accepting more

personal responsibility, increasing self-esteem, increasing self-acceptance, increasing self-reliance, decisiveness in decision making, having a sense of control, paying attention to the coping process, forming an internal source for evaluation and gaining trust are the most important effects of game therapy in hyperactive children (51). In line with the findings of the research on higher effectiveness of emotional intelligence training on social compatibility of hyperactive children than deaf children (**Table.6**), according to research evidence, having emotional intelligence skills, protects hyperactive person against behavioral problems strengthening incompatibility including antisocial behaviors such as anger, aggression and anxiety, and, by weakening emotional disturbances, can lead to their behavioral control.

In fact, it can be assumed that by enhancing emotional intelligence skills, people with attention-deficit hyperactivity will be able to deal more effectively with anger and behavioral problems that reinforce individual and social incompatibility (52). Hanafi et al. (2012), reported that emotional intelligence of children with hearing impairment was not significantly different from their hearing peers. Moreover, they indicated that there was a positively significant relationship between emotional intelligence, educational progress and reduction of behavioral problems (53). The results Roy's study (2012) indicated the effectiveness of teaching social behaviors on improving self-esteem, self-respect, social self-esteem, and family self-respect in mentally weak teenagers (54).

4-1. Limitations of the study

- 1) Doing the research in a specific time frame that, if repeated at different periods of the year or a certain period, could produce more accurate results.

- 2) Limited ability to control all the reviewing variables in the position of the research.
- 3) Time-consuming training and difficulty in transferring educational materials and the likelihood of presence of disturbing variables.

5- CONCLUSION

According to the findings of this study conducted in the city of Sari, Iran, during the school year of 2015-2016 on deaf and hyperactive students of the exceptional elementary school, it was concluded that the effectiveness of game therapy and emotional intelligence training is higher on social compatibility and communicative skills of hyperactive children than deaf children. Therefore, in view of the effectiveness of game therapy on hyperactive children, and given the availability of appropriate facilities in exceptional schools, it is necessary to address behavioral deficits and improve social compatibility in these children through education of game therapy techniques and their applications to the respected school counselors; and given the fact that the school environment, with the presence of peers, is the best place to teach communicative skills to hyperactive children, this treatment should be used to improve the relationships between these children and others, particularly their peers. As hyperactive children often have difficulty recognizing their feelings and those of others, having empathy and good relationship with their peers, and they are socially excluded, it is advised that their school counselors teach them emotional intelligence (including self-awareness, self-management, social awareness, and relationship management) to help them overcome their problems since it directly affects the mental health of a child.

6- AUTHOR CONTRIBUTIONS

All the authors worked together to foster this study. The task of writing was mostly done by Sahebeh Barimani, supervising the process of research and guidance with Javanshir Asadi, and professional consultation with Afsaneh Khajehvand.

7- CONFLICT OF INTEREST: None.

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9- REFERENCES

1. Jannatian S, Noori A, Shafti SA, Molavi H, Samavatian H. Effectiveness of game therapy based on cognitive-behavioral approach on increased symptoms of attention-deficit hyperactivity disorder among 9 and 11-year-old male students with ADHD. Behavioral sciences research. 2008;6(2):42-35.
2. Gaub M, Carlson C. Behavioral characteristics of DSM- IV-III-R subtype in a school based population. Journal of abnormal child psychology. 2005;25:103-11.
3. Association AP. Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing; 2013.
4. Caplan H, Sadok B. A Digest of behavioral sciences psychiatry. Tehran: Shahr Ashoob Publications; 2002.
5. Rapport MD. A Model of Child Psychology: Implication for Under Standing Attention Deficit / Hyperactivity Disorder and Treatment Efficacy, 2001.
6. Ghomrani O, Jafari H. An Introduction to Emotional Intelligence and Blindness. Journal of Exceptional Education. 2003;31:25-30.
7. Firouzbakht M, Eftekhar Ardebili H, Majlesi F, Rahimi A, Ansari Dezfooli M, Esmailzadeh M. Prevalence of neonatal hearing impairment in province capitals. sjsph. 2008;2008(4):1-9.

8. Ataee M, ghamarani A, Siadatian SH. Comparative Consideration of Vitality in Students with and without Hearing Impairment. *Exceptional Education.* 2014;4(126):16-21.
9. Shokoohi Y, Akram M, Akram P. Behavioral disorders of children and teenagers. Tehran: Teymoorzadeh; 2010.
10. Peris TS, Hinshaw SP. Family dynamics and preadolescent girls with ADHD: The relationship between expressed emotion, ADHD symptomatology, and comorbid disruptive behavior. *Journal of Child Psychology & Psychiatry.* 2003;44:1177-90.
11. Ohan JL, Johnston C. What is the social impact of ADHD in girls? A multi-method assessment. *Journal of Abnormal Child Psychology.* 2007;35:239-50.
12. xon E. The social competence of children with Attention Deficit Hyperactivity Disorder: A review of the literature. *Child Psychology and Psychiatry Review.* 2001;6:172-80.
13. Pfiffner LJ. Psychosocial treatment for ADHD InattentiveType. *The ADHD Report.* 2003;11:1-8.
14. Boakes J, Chapman E, Houghton S, West J. Facial affect interpretation in boys with attention deficit/hyperactivity disorder. *Child Neuropsychology.* 2008;14:82-96.
15. Yuill N, Lyon J. Selective difficulty in recognizing facial expressions of emotion in boys with ADHD: General performance impairments or specific problems in social cognition? *European Child & Adolescent Psychiatry.* 2007;16:398-404.
16. Khojasteh Mehr R, Abbaspoor Z, Karaee A, Koochaki R. The effect of a "Succeeding in School" program on the academic performance, academic self-concept, attitude towards school, learning how to succeed in school and social adjustment of school students. *School Psychology Priodical.* 2002;1(1):27-45.
17. Fooladi E. Counselation of perspectives, mental health terms, and skills. tehran: toloue danesh publications; 2004.
18. Meninger W, John M, Ellis E. Growth of personality and mental health. tehran: parents and teachers council; 2002.
19. Punia S, Sangwan S. Emotional intelligence and social adaptation of school children. *ournal of Psychology.* 2011;2(2):83-7.
20. Jamali Ghareh Gheshlaghi E. An investigation into the relationship between social intelligence and offensiveness control and increasing individual compatibility among students of humanities at Orumieh Azad University in the school year of 2014-2015: Orumieh Azad University; 2015.
21. Hargie Q, Dickson D. Skilled interpersonal communication. London: Routledge; 2004.
22. Yousefi F. the relationship between emotional intelligence and communication skills in university students. *Journal of Iranian Psychologists.* 2006;3(9):5-13.
23. Song LJ, Huang G, Peng KZ, Law KS, Wong C, Chen Z. The differential effects of general mental ability and emotional intelligence on academic performance and social interactions. *Personality and Individual Differences.* 2010;38(1):137-43.
24. Petrides KV, Pita R, Kokkinaki F. The location of trait emotional intelligence in personality factor space. *British Journal of Psychology.* 2007;98:273- 89.
25. Saklofske DH, Austin EJ, Galloway J, Davidson K. Individual correlates of health – related behaviors, preliminary evidence for links between emotional intelligence and coping. *Personality and Individual Differences.* 2007;47:421-502.
26. Yip J, Martin R. Sense of humor, emotional intelligence, and social competence. *Journal of Research in Personality.* 2005;40:1202-8.
27. Bar-On, R. The Bar-on model of emotional-social intelligence (ESI). *Journal of Psychotherapy.* 2006;18:13-25.
28. Moheb N, Amiri S, Behravesh A. Effectiveness of short-term structural game therapy on symptoms of attention-deficit hyperactivity disorder in pre-elementary

- children (6-year-old). *Education Evaluation Journal*. 2013;6(22):27-43.
29. Faramarzi S, Moradi MR, Motamed B. Effectiveness of psychodrama with pantomime on the social adjustment of deaf female students. *Audiol*. 2015;23(6):85-91.
30. Rutter MA. A children's Behavior Questionnaire for Completion by Teachers: Preliminary Findings. *Journal of Child Psychology and Psychiatry*. 1967;8:1-11.
31. Mehryar A, Yousefi, F. Diagnosis and treatment of mental illness in children. Tehran: Publications Roshd; 1991.
32. Rutter M CA, Tupling C, Berger M, Yule W. Attainment and adjustment in two geographical areas-I. The prevalence of psychiatric disorder. *Br J Psychiatry*. 1975;126:493-509.
33. Yousefi f. Standardization of Rutter Scale in order to study the behavioral and emotional problems of male and female students in elementary schools in Shiraz. *Journal of Social and Human Sciences*, University of Shiraz. 1998;25 and 26:171-94.
34. Truscott JW. A Comparison of social skills among second grade children with varying levels of reading achievement: a dissertation in education, Submitted to the Graduate Faculty of Texas Tech University; 1989.
35. Zare Z, Ehteshamzadeh P. A Study on the Relationship Between Parent's Strict Parenting Styles and Avoidance Style with Social Skills of Preschool Children in Shoshtar. Third National Conference on Psychology and Education; Shadegan: Islamic Azad University, Shadegan Branch; 2016.
36. Asgari Nekah SM, Abedi, Z. The Effectiveness of Executive Functions based Play Therapy on improving Response Inhibition, planning and working memory in children with Attention Deficit Hyperactivity Disorder. *Journal of Cognitive Psychology*. 2014;2(1):41-51.
37. Safi S, Najafi M, Nikyar H. The effectiveness of curative games on self-control, behavior and hyperactivity signs on ADHD children. Najaf Abad: Islamic Azad University; 2015.
38. Kazemi A, Nikyar H, Najafi M. Effectiveness of Anger ManagementGames on Behavioral and Anger Symptoms of Children with Hyperactivity/Attention Deficit Disorder. *Journal of Isfahan Medical School* 2016;34(381):461-9.
39. Bakhshayesh A, Mirhosseini R. Effectiveness of Play Therapy on the Reduction of Children's Severity Symptoms with Attention Deficit/Hyperactivity Disorder (ADHD) and Promotion of Their Academic Performance. *sjimu*. 2015;22 (6):1-13.
40. Ganji K, Zabihi R, Khodabakhsh R, etal. The impact of child-centered play therapy on reducing the behavioral symptoms of children with attention deficit / hyperactivity. *Journal of Clinical Psychology*. 2011;1(2):25-15.
41. Eftekhar Soad Z, Mehrabizadeh Honarmand M, Najarian B, Ahadi H, Asgari P. The Effect of Emotional Intelligence Training on Reducing Aggression and Increasing Individual-social Adaptability among Second Grade High School Girls. *New Findings in Psychology*. 2009;4(12):137-49.
42. Mahmoodi M, Najafi F. Investigating the effect of emotional intelligence training on communicative skills of students of Najafabad Islamic Azad University. *Psychological models and methods*. 2002;2(8):33-51.
43. Hossein Khanzadeh AA, Roodposhti V. Effect of teaching communicative skills on social skills of children with hearing impairment. *Journal of exceptional training*. 2015;6:45-55.
44. Mikami AY, Huang-Pollock CL, Pfiffner LJ, McBurnett K, Hangai D. Social skills differences among Attention-deficit/hyperactivity disorder subtypes in a chat room assessment task. *Journal of Abnormal Child Psychology*. 2007;35:509–21.
45. Sarihi N, Sadat pournesaei G, Nikakhlagh M. Effectiveness of group play therapy on behavior problems in preschool children. *Journal of Analytical-Cognitive Psychology*. 2015;6(23):35-41.
46. Jalali S, Molavi H. Effect of game therapy on children's separation anxiety disorder. *Journal of psychology*. 2014;14(4):370-82.

47. Ghodrati Mirkoohi M, Sharifi Daramadi P, Abdollahi Baghrabadi G. Effectiveness of cognitive-behavioral training of parents on symptoms of children's disobedience disorder. *Psychology of exceptional individuals.* 2015;5(20):50-61.
48. Hinshaw SP. Preadolescent girls with attention deficit/hyperactivity disorder: I. Background characteristics, comorbidity, cognitive and social functioning, and parenting practices. *Journal of Consulting and Clinical Psychology.* 2002;70:1086-98.
49. Behrooz B, Aliabadi S, Yazdkhasti F, Veisi S. A Comparison between Children with attention-deficit hyperactivity disorder and healthy children in terms of emotional intelligence and affection styles. *Research in therapeutical sciences.* 2012;8(6):1032-44.
50. Dupaul G, Weyandt L. School-based intervention for children with attention deficit hyperactivity disorder: Effects on academic, social, and behavioral functioning. *International Journal of Disability, Development and Education.* 2006;53(2):161-76.
51. Bratton SC, Ray D, Rhine T, Jones L. The efficacy of play therapy with children: A meta-analytic review of treatment outcomes. *Professional Psychology: Research and Practice.* 2005;36(4):376-89.
52. Fathi K, Adib-Sereshki N, Sajedi F. The Effectiveness of Emotional Intelligence Training on Aggression and Hyperactivity of Students with Physical Disability. *Archives of Rehabilitation.* 2014;14(2):129-35.
53. Hanafi M, Yasin M, Bari S, Salubin R. Emotional intelligence among deaf and hard hearing children. *Journal of Social Sciences.* 2012;7(5):679-82.
54. Roy B. Adjustment problems of educable mentally retarded. *International Journal of Scientific and Research Publications.* 2012;2(6):1-5.