Research Paper: The Efficacy of Cognitive Behavioral Play Therapy on Self Esteem of Children With Intellectual Disability

Shaqayeq Bana¹, Firoozeh Sajedi²*, Hoshang Mirzaie³, Pouria Rezasoltani⁴

1. Department of Psychology and Exceptional Children Education, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
2. Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
3. Department of Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.
4. Department of Biostatistics, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Objectives: The study aims to investigate the effectiveness of Cognitive-Behavioral Play Therapy (CBPT) on the self-esteem of children with intellectual disability.

Methods: Pre-test and post-test, control group, quasi-intervention design was adopted for the study. The study sample consisted of 40 children conveniently selected based on the inclusion and exclusion criteria from among educable intellectually-disabled children in two care centers for children with special needs in Tehran, who were randomly assigned into intervention and control groups. In both the groups, the pre-test was conducted by the Cooper-smith Self-Esteem Inventory (CSEI) and then for the intervention group, CBPT sessions were performed in 12 sessions of 60-minute each (two days a week). The post-test was also administered to both the groups after intervention. The data obtained were analyzed using independent t-test and Levine's test by SPSS software.

Results: Self esteem was observed to be significantly increased in the intervention group (p<0.01) as compared with the control group.

Discussion: It seems that play therapy is an effective method to increase self esteem in children with intellectual disability. Therefore, educators and teachers are advised to use this method as an adjunctive therapy for such children in rehabilitation centers and schools.

1. Introduction

Today, the issue of intellectual disability has become a chronic problem [1]. According to the statistics, in any population, 2.5% suffer from intellectual disability and 75% suffer from moderate and mild intellectual disability. In general, intellectual disability occurs more in males than in females, such that the mean ratio is 2:1 in moderate intellectual disability and 1.5:1 in severe intellectual disability [2]. Sherafati (2010) reported that, according to the statistics provided by the Welfare Orda-
nization in Iran, more than 1,500,000 people have been identified as intellectually disabled [3].

One group of intellectually disabled children were educable, having an IQ of two to three standard deviations below the mean [4], ranging between 50-55 and 70 [5]. These children exhibited a significant delay in many milestones including social skills [6]. Social skills are defined as learned behaviors accepted by society; behaviors with which one can interact with others in a way that positive responses emerge and negative responses are avoided [7]. Self-esteem as one component of social skills has received much attention, and it is considered a very important quality in children since it aids in building positive relationships with their peers in school, and for participating in recreational activities, and so on [8].

A normal child from a very young age begins to build a self-image or visualization. The image or visualization is usually related to a child’s self-concept. In fact, child’s image or visualization of his own self is self-concept, and the value assigned to this image or visualization is the same self-evaluation called self-esteem. Children with intellectual disability do not normally pass through these steps like ordinary children and thus feel troubled with intellectual disability do not normally pass through the same self-evaluation called self-esteem. Children with intellectual disability do not normally pass through these steps like ordinary children and thus feel troubled with intellectual disability [9].

Play is regarded as a central element of healthy growth through which children develop self-regulation, and self-esteem [10]. Cognitive-Behavioral Play therapy has been proposed since several decades as an interventional aid for developing social relationships in children with intellectual disability [11]. Cognitive-behavioral play therapy is a developmentally sensitive adaptation of CBT. With CBPT, play is used as a medium to communicate and teach empirically supported techniques to children aged 3 to 8 years indirectly and also in an engaging way [12].

Research evidence also shows that intervention can help modulate and enhance self-esteem and sense of self-worth that subsequently results in positive changes in that child’s other areas of performance. Play therapy is an effective method in resolving behavioral and mental problems in children. A play therapist, in fact, makes use of a play situation to connect with the child and attempts to deal with the child’s emotional drainage to help in resolving their challenges in normal life. Play therapy affects different skills of students with intellectual disabilities such as social skills and adaptive behavior [13].

Coleman et al. (2011) in their study concluded that direct and short-term play therapy significantly contributes to improving self-expression, self-esteem and verbal communication, as well as self-acceptance and reduced isolation in children [9]. Baggerly (2004) concluded that child-centered play therapy increases self-esteem and leads to reduced anxiety and depression in homeless children [14].

Chinekesh et al. (2015) showed in their study that group play therapy helps to enhance leadership skills and increase in social and emotional skills among preschoolers [15]. Hassani, Mirzaeian and Khalilian (2014) in their study to determine the efficacy of Cognitive-Behavioral Play Therapy (CBPT), reported decreased anxiety and increased self-esteem in children with Attention Deficit Disorder (ADD) and Attention-Deficit Hyperactivity Disorder (ADHD) [16]. In a study conducted by Madadi Zavareh, Kamkar and Golparvar (2007), the relationship between playing games and increased self-esteem in blind students was examined [17].

Studies conducted in recent years have indicated a special focus on play therapy and proposed it as a technique that reduces emotional and social problems [18]. Since a systematic literature review revealed that there have been no studies conducted that focused on the role of CBPT in enhancing self-esteem in children with intellectual disability [11, 19], though it seems that attention to this issue may prevent incidence of more serious problems such as deviant behaviors [20], psychiatric disorders [21] and depression with suicidal thinking [22] in such children in adulthood; this study aimed to evaluate the effectiveness of CBPT on self-esteem of children with intellectual disability.

2. Methods

This pre-test and post-test, quasi-intervention study was conducted on control and intervention groups. After obtaining necessary permissions from the Social Welfare and Rehabilitation Sciences University and receiving an introduction letter to submit to the Welfare Organization, as well as ensuring necessary coordination with the relevant authorities, samples were obtained from 200 children with intellectual disability living at the Welfare Organization’s boarding centers in Shemiranat County.

After implementing the briefing session and obtaining consent from educators and children, we used Raven’s Progressive Matrices (RPM) to identify intellectually disabled children with IQ level of 50/55-70 from among 8-12 year old intellectually disabled children studying in the academic year 2015-2016. According to Central Limit Theorem, the minimum sample size for experimental design is 30 [23]. However, 40 children were selected for
better accuracy. Simple random sampling method was used to select these 40 students, who were subsequently divided into two groups of 20 students each, based on their intelligence and age, using the matching subjects design.

A pre-test was conducted by the researcher in both groups using the Cooper-Smith Self-Esteem Inventory (CSEI) [24]. The intervention group was divided into 4 groups of 5 each to implement the intervention. Subsequently, CBPT interventions were carried out by the researcher (with license of Cognitive-Behavioral Play Therapy) in 12 one-hour sessions (two sessions per week) in the intervention group. After completing the intervention, a post-test was conducted by the researcher in both the groups and data were collected and analyzed.

To observe moral considerations, after the post-test was conducted, the play therapy interventions were also implemented in the control group in fewer, intense training sessions. Modifying the pre-test scores through ANCOVA was not necessary due to the lack of difference in pre-test scores of experience and control groups. It is because, basically, the role of (ANCOVA) is to modify the initial differences between the two groups. Therefore, data analysis was performed using an independent t-test by SPSS-23 software.

**Instruments**

In this study, the Raven’s Progressive Matrices (RPM) and Cooper Smith Self-Esteem Inventory (CSEI) were used.

**RPM**

The Colored Progressive Matrices (CPM or CPM-Classic Raven) were developed by Raven (1947) in England, which includes 36 images, mostly colored, to test the IQ level of children aged 5 to 11 years, and adults with intellectual disabilities. The items in the test consist of 36 matrices or schemes with a part deleted in each and the subject must detect the deleted part from six different options [25]. Scoring in the CPM is either one if answered correctly, or zero if answered incorrectly. The minimum and maximum scores that can be obtained in this test are 0 and 36, respectively.

The time limit has not been taken into consideration for this test [26]. Ketone et al. (2005) in their study obtained the internal consistency (the Kuder–Richardson Formula 20) on 6-11 year old children from 0.76 (for 11 year old children) to 0.88 (for 8 and 9 year old children) and the split-half reliability coefficients of 0.81 (for 10 and 11 year old children) to 0.90 (for 9 year old children). Raven (1936) reported the test-retest coefficients of the 36-item CPM for 6.5 and 9.5 children as 0.60 and 0.80 after the period of one year, indicating the test’s sensitivity to fluctuations in the output of intellectual activity in early childhood [26].

In Iran, Molavi (1994) in a study entitled “preliminary standardization and study of the Raven’s Standard Progressive Matrices reliability and validity in a sample of students from Isfahan and Shahre Babak County”, implemented the test on a sample of 248 subjects aged 8 to 13 years and concluded that difference between the means obtained in the study and the means of English children at the age of 8 to 11 years were significant at the level of 1% [27].

**CSEI**

The School Short-Form Cooper-Smith Self-Esteem Inventory (1967) was used to measure the level of self-esteem among the subjects of the study. Cooper-Smith developed the inventory based on the revised scale items used by Rogers and Dymond (1954) [24]. The School Short-Form of the Inventory, adopted from the primary original form, is used for 8 to 15 year old students and is comprised of 58 items, 50 of which are related to self-esteem and the rest are related to polygraphy. Regarding the scoring procedure in this test, responses reflecting high self-esteem are scored as 1 and those reflecting low self-esteem are scored as zero [28].

Studies in Iran and other places reveal acceptable validity and reliability of the test. Reliability of the School Short-Form of the Inventory was calculated in the range of 0.87-0.92 for fourth to eighth grades using the KR-20, and test-retest reliability coefficient with the interval of 3 years was calculated as 0.42 and 0.64 for the age group of 9 and 12 years old, respectively [28]. The Cooper-Smith scale reliability coefficient in Pourfaraji’s study (2002) was obtained 0.52 by the Cronbach’s alpha that is acceptable in psychometric terms. In this study, the Cronbach’s alpha value was equal to 0.64 [29].

**CBPT interventions package**

A CBPT interventions package was designed and developed according to Mirzaei (2014), an expert in the field, and on the basis of library resources [30], as well as based on the researcher’s experience and knowledge gained by participating in Tahmasian’s (2015) and Behmanesh’s (2015) CBPT workshop, in accordance with the age and IQ level of the study subjects in order to increase their self-esteem. The interventions were imple-
mented in 12 one-hour sessions (2 sessions per week) in 4 groups of 5 children each.

**The content of the intervention sessions**

**First session**

During this session, children gained an overall familiarity with the objectives of establishing the play room and interacted with the environment and therapist.

**Second session**

Playing with puzzle/adventure tower/feeling exploration game: The objectives of this session were to strengthen the power of matching, sorting and coordinating, concentrating and nerve and muscle coordinating, as well as to identify different feelings.

**Third session**

Assembling toys-flower chef/ Bowling/Body language: The objectives of this session were to enhance eye-hand synchronization and fine motor skills, to train cognitive skills and to promote locomotor speed, motor skills, and communication with body language.

**Fourth session**

Playing with Lego/Rings game/the country’s king game: The objectives of this session were to strengthen manipulation and fingers synchronization as well as nerve-muscle synchronization, and also to enhance concentration, imagination and aspirations of children.

**Fifth session**

Playing with puzzle/Playing with cute animals/Rock paper scissors game: The objectives of this session were to think about the idiosyncratic features of interest and to provide the children with equal chance to play.

**Sixth session**

Molecule building game/Spin the bottle/Funny drawings: The objectives of this session were to enhance the sense of collaboration and learn more about jobs, to help grow goodwill and friendly relations among children in groups, to promote language skills, to build images and to raise concentration.

**Seventh session**

Playing with Lego/Please make me laugh/Pairs coordination: The objectives of this session were to raise self-esteem in children and to make them responsible, as well as to introduce individuals’ similarities and differences to each other. Children have limited ability to express their feelings and thoughts through words, and thus play therapy provides a nonverbal means of communication that goes beyond the barrier of language and culture [31].

**Eighth session**

Spiral chef/ Mirror game/Soft ball game: The objectives of this session were to improve upon children’s hands-on skills, to make rows and columns, to make pairs and detach, to classify, and so on. This session also aimed to encourage teamwork, increase concentration in children, and to enhance communication and cooperation among themselves.

**Ninth session**

Tango/Sharks and fish/Dream vase painting: The objectives of this session were to develop plans, to explore, to find logical relation between objects, to encourage constructive thinking, to express dreams and imaginations, to raise self-esteem, and to become familiar with one another while acknowledging the similarities and differences amongst themselves.

**Tenth session**

Thread chef/Quick reaction/Playdough: The objectives of this session were to enhance fine motor skills, eye-hand synchronization in children, to raise concentration and quick response, to help them express their dreams and desires, to help increase proprioception and tactile senses, to increase strength and improve fine motor skills and so on.

**Eleventh session**

Jobs card/Colored bricks/Building stories: The objectives of this session were to enhance the sense of collaboration and learn more about jobs, to help grow goodwill and friendly relations among children in groups, to promote language skills, to build images and to raise concentration.

**Twelfth session**

In this session, all the measures undertaken for the children along with the skills taught to them during the previous sessions were reviewed.

After replacement of the subjects in experimental and control groups and applying pre-test for both groups, the
The experimental group received 12 sessions of play therapy based on cognitive behavioral therapy. The treatment involved 12 sessions of an hour each.

3. Results

In this study, 40 educable intellectually-disabled children aged between 8-12 years were taken in groups of control and intervention (n=20 in each group). Demographics and Baseline Characteristics of the subjects participating in the study have been separately reported for each group in Table 1. The mean age of the children was 10.15±1.5 and 10.50±1.67 years in intervention and control group, respectively. The independent t-test was used to compare the two groups in terms of age, and its results showed no significant difference between the two groups (P=0.489). Also, the mean IQ of children in the intervention and control group was 71.10±12.82 and 71.45±9.41, respectively. The independent t-test was also used to compare the two groups in terms of intelligence, and its results showed no significant difference between the two groups (P=0.922). The mean and SD of the self-esteem scores of the subjects participating in the study have been separately reported for each group in Table 2.

Given that no statistical difference was observed between the two groups, the need to modify the initial differences did not arise. The Shapiro Wilk and Kolmogorov Smirnov tests were used to examine the normality of frequency distribution of the dependent variable (i.e. overall self-esteem), and the frequency distribution of the overall self-esteem scores was observed to be normal.

The Levine’s test was used to test the equality of error variances, the result of which confirms the assumption of homogeneity of error variances. The result of the independent t-test was equal to 13.434 which was significant with 38 degrees of freedom at the level of p <0.001 and the mean difference between the two groups in terms of the overall self-esteem scores was 14.55. This result indicates that CBPT significantly and positively correlated with the self-esteem of children with intellectual disability.

4. Discussion

In this study, the efficacy of CBPT on self-esteem in children with intellectual disability living at a Welfare Organization’s boarding center was examined. The results showed that the aforementioned intervention positively affected the self-esteem of children with intellectual disability.

Play is considered a key component of the healthy growth, through which children develop their cognitive, language, social competence, self-regulation, and self-esteem.

### Table 1. Demographics and baseline characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Intervention</td>
<td>10.15</td>
<td>1.496</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>10.50</td>
<td>1.670</td>
<td>20</td>
</tr>
<tr>
<td>Intelligence</td>
<td>Intervention</td>
<td>71.10</td>
<td>12.826</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>71.45</td>
<td>9.411</td>
<td>20</td>
</tr>
</tbody>
</table>

### Table 2. The mean and SD of the self-esteem scores of the subjects

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem pre-test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>12.90</td>
<td>2.972</td>
<td>20</td>
</tr>
<tr>
<td>Control</td>
<td>12.10</td>
<td>2.827</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>12.50</td>
<td>2.891</td>
<td>40</td>
</tr>
<tr>
<td>Self-esteem post-test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>26.95</td>
<td>3.634</td>
<td>20</td>
</tr>
<tr>
<td>Control</td>
<td>12.40</td>
<td>3.202</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>19.68</td>
<td>8.106</td>
<td>40</td>
</tr>
</tbody>
</table>
Esteem [10]. As the self-esteem is shaped and developed on the basis of childhood experience and interactions, the play therapy indirectly changes children’s experiences and boosts their self-esteem by creating impressions that are enjoyable and desirable. In fact, such group playing of games provides children with chances to obtain a realistic and positive assessment of their own capabilities during the process of group interaction. Children are able to explore their social, physical and imaginative worlds through such interactive games. Moreover, encouraging children to focus on their positive attributes increases their self-esteem [8].

As noted by Pope et al. (1999), cognitive-behavioral training increases children’s self-esteem. In CBPT, the influence of inconsistent, inefficient beliefs and attitudes is emphasized upon, and it is attempted to change the child’s irrational thinking and maladaptive behavior. This is because false beliefs which lead to low self-esteem in children, change beliefs that lead to the child’s self-esteem [32].

These findings are consistent with the results of Wettig et al.’s study (2011) who reported that short-term play-therapy improves children’s self-esteem and trust in themselves, thereby reducing their social isolation [23]. Similarly, the results of the study by Baggerly (2004) showed that child-centered play therapy increases children’s self-esteem. In addition, the results of this research are in line with studies that indicate play therapy to be influential in reducing the behavioral problems among children [20, 21, 33] and studies that show group play therapy improves children’s social skills [15], as well as with studies revealing play therapy to increase children’s self-esteem [16].

Cognitive-behavioral play therapy methods for children with intellectual disabilities have not been overlooked and its literature has significant shortcomings. Cognitive-behavioral play therapy approaches have shown promising results in social and emotional functioning in children with intellectual disabilities. As a result, a renewed interest in the development of theory, research, and practice of play therapy for children with intellectual disabilities will result in propelling the required comprehensive support and interventions needed. The study results can be used to improve the social and emotional problems of intellectually disabled children. Limitations of the study: The size of the study sample as well as lack of any follow-ups was among the limitations of this study.

5. Conclusion

In general, CBPT is a useful way to increase self-esteem in children with intellectual disability, leading to improved social relations and self-confidence among these children. Thus, this style of play therapy is recommended to be taught to parents, primary school teachers and educators in rehabilitation centers and to be widely used by counselors, teachers and educators to improve self-esteem in children with intellectual disability.

Acknowledgments

This article is derived from a master’s thesis of the first author in Department of Psychology and Exceptional Children Education, University of Social Welfare and Rehabilitation Sciences. We would like to express our gratitude to all children, educators and officials at the Welfare Organization who contributed and collaborated with us in this study by giving their precious time participating in the training sessions and responding to the items of the questionnaires used in the study.

Conflict of Interest

The authors argue that there is no conflicts of interest between them.

References


[3] Shefahati S. [The number of mentally retarded children in Iran is unclear (Persian)] [Internet]. HamshahirOnline. 2009 December 28; Code: 98210.


[23] Wettil HH, Coleman A, Geider FJ. Evaluating the effectiveness of Theraplay in treating shy, socially withdrawn chil-