

The Effectiveness of Cognitive Behavioral Therapy to Alleviate Attention Disorder in Hyperactive - Gifted Children

Assistant Prof. Azhar M. Essawy
Social Casework Dept.
Kafr-Sheikh Higher Institute of Social Work Egypt

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Abstract

The current study aims to discover the effectiveness of cognitive behavioral therapy in alleviating attention deficit disorder in hyperactive- gifted Children. The study tackled two main themes: attention deficit disorder and gift. The current study is an experimental study that utilized the pre- post experimental design for experimental and control group. Applied to (10) gifted students at Riyadh Elementary School in Kafr Elsheikh governorate have attention deficit disorder. The results determine the effectiveness of cognitive behavioral therapy in reducing the symptoms of attention deficit for gifted children.

Key Words: Attention Deficit Disorder, Behavior therapy, Gifted Children.

الملخص

الأطفال الموهوبين ذوي اضطراب الانتباه وفرط الحركة يحققون مستويات عالية ثمن الذكاء مقارنة بأقرانهم من الأطفال العاديين ، ولذلك هؤلاء الأطفال يحتاجون الى تقديم خدمات متخصصة ويعاني هؤلاء الأطفال من العديد من المشكلات المرتبطة بفرط الحركة ونقص الانتباه والاندفاعية من اجل ذلك سعة هذه الدراسة الى تخفيف حدة اضطراب الانتباه لدى الأطفال الموهوبين ، وتعتبر هذه الدراسة من الدراسات التجريبية التي اعتمدت على المنهج التجريبي المتمثل في التصميم الكلاسيكي وطبقت على عشر اطفال من ذوي اضطراب الانتباه بمدرسة السلام الابتدائية بالرياض بفر الشيخ وقد توصلت الدراسة الي فعالية العلاج المعرفي السلوكي

Introduction

The children who show attention deficit hyperactivity disorder (ADHD) symptoms may, get high scores at intelligence tests and may answer complicated questions correctly, despite not being able to answer easy questions (Carroll, et al, 1998, pp.79-85). The children who show ADHD symptoms need to be supported with special services. Sahnurova study proved a connection between mathematical intelligence and ADHD symptoms, the ADHD can be a gifted children; and would not use their talents efficiently. (Sahnurova et al. 2017, pp.52-57)

Gifted children having ADHD are generally more gifted than their non- ADHD peers (Zentall, 1997, pp.99-100). Because the negative behavioral manifestations of ADHD may keep these children from performing well on group tests, many educators believe diagnostic tests uncover only the children who have extremely superlative talents or gifts. Though high intelligence can help the child overcome some of the challenges of ADHD over his or her lifetime (Phelan, 1996, pp.10-15), it does so only to the extent that it allows the child to compensate to the point of seeming average. These children also tend not to be nominated for gifted testing or programs.

Family, adoption, and twin studies demonstrate that genetic factors are very important in ADHD. Some environmental factors, including premature birth, head injury, fetal alcohol syndrome, prenatal exposure to drugs of abuse, such as cocaine, lead toxicity, prenatal maternal smoking, and rare endocrine abnormalities can all cause the ADHD syndrome (Kaufman et. al, 2000, pp1-3). The characteristics of a typical gifted child with ADHD excluded from gifted programs were reported by (Wolfe and French, 1990, pp: 7-9):

- Makes jokes or puns at inappropriate times.
- Is bored with routine tasks and refuses to do them.
- Is self-critical, impatient with failures.
- Tends to dominate others.
- Would rather stay by oneself.
- Has difficulty moving into another topic when engrossed.
- Often disagrees vocally with others in a loud, bossy manner.
- Is emotionally sensitive-may overreact.
- Is not interested in details, often hands in messy work.
- Refuses to accept authority, nonconforming, stubborn.

Some parents ignore that their children have ADHD; thinking that they are gifted. This situation results in children being directed to areas in which they are not talented. Therefore, guidance and counseling services should provide parents with training. In this sense, it is suggested that the students be supported through education programs designed; especially for them. It is necessary to help reveal their ADHD children intelligence areas by giving them the chance to express themselves throughout the education process. (Carroll, et al, 1998, pp.88-98). Teachers do not particularly tend to like these children, thus they do not generally refer them for gifted programming, because, in the teacher's mind, these students do not deserve to be there. Parents find them difficult to live with, and peers reject them, so life becomes a series of negative interactions with few

opportunities for self-fulfillment and are intelligent enough to realize they are different, but may be helpless to change their behaviors at their own volition. Mendaglio found that gifted children with ADHD are painfully aware of their academic failures and misbehaviors and this is manifested in nonspecific anger. On the positive side, when such children do qualify for and are placed into programs for gifted and talented children, they and their parents report positive increases in self-esteem and attitude. (Mendaglio, 1995, pp.169-170)

Gifted children with ADHD require highly stimulation and mentally and psychologically challenging environments to be successful (Baum et al., 1994, pp.48-53).

Gifted children with ADHD usually have a few subjects particularly science they really love and may not care about the rest (Zentall, 1997, pp.99-100). This can lead to incredible power struggles in the home and school. In children like this, underachievement begins early, with the ADHD not generally identified until at least 6th grade (Lovecky, 1994, pp.3 &18). By then the child has set up a pattern of inconsistent performance and failure to complete work, leading to frequent negative feedback, leading in turn to diminished academic self-esteem and anger.

Teachers who have successfully worked with gifted children with ADHD recognize that cognitive therapy is helpful. Gifted children with ADHD can be taught word processing and computer skills that will allow them to compensate for their inability to write quickly or neatly, or to keep their thoughts while writing (Ramirez-Smith, 1997, pp.1-9). It is beneficial to talk openly with students about expectations and problems and include them in developing plans of action (Mendaglio, 1995, 171-172). Contracts, with student-chosen rewards, are helpful in some cases. because gifted children tend to be primarily intrinsically motivated, external rewards and punishments have little effect unless they are selected by the children themselves. Students need to be convinced that hard work will benefit them personally. Goal setting is another useful strategy in this area, because it helps remove the child from the impulsivity of the moment and develop focus on the future. Masoumeh sees that in cognitive-behavior therapy for children suffering from ADHD, the focus is on reducing aggression signs through failure anger control training. (Masoumeh, 2015, pp.112-119)

These signs are due to mistaken attributions about the goal or their partial selection of aggression signs. The results showed a significant difference between the control and experimental groups in post test and follow up phases. Cognitive-behavior therapy seems to

be effective on anger and its subscales such as failure and aggression, and also leads to alleviate them. It also improved the relationship between these children with their peers and superiors.

The gifted are students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily provided by the school in order to fully develop those capabilities. (Klein, 2015, pp.45-55). The gifted child with ADHD may exhibit a discrepancy between intellectual age, and social and emotional ages. This can lead the child to be out of sync with everyone (Lovecky, 1994, pp.3 &18). Social skills are usually underdeveloped in these children; as a result, they may have few friends, with those few generally being younger. Again, these children are aware of their differences and lack of friends, so may become depressed or oppositional in response. The current study sought to help gifted children with ADHD through using cognitive behavioral therapy.

Aims of the Study:

1-Testing the effectiveness of The cognitive behavioral therapy on alleviating attention deficit disorder associated with Hyper Activity in the gifted children .

Concepts of the study:

1- ADHD; Attention deficit hyperactivity disorder (ADHD) affects children and teens and can continue into adulthood. ADHD is the most commonly diagnosed mental disorder of children. Children with ADHD may be hyperactive and unable control their impulses. or they may have trouble paying attention (Neihart, 2003, 222-230).

Attention deficit disorder is defined operationally in the current study as:

- Registered in a primary school
- Registered as gifted in the social worker's files
- Has artistic - sports talent
- Suffers from poor concentration
- Excessive movement
- Trembling of hands or feet or twisting in the seat
- Cannot sit in the seat for much time
- Speak before authorizing him
- It is difficult for him to remember things

Cognitive-behavioral therapy:

cognitive behavior therapy (CBT) is a form of psychotherapy that treats problems and boosts happiness by modifying dysfunctional emotions, behaviors, and thoughts. CBT focuses on solutions, encouraging patients to challenge distorted cognitions and change destructive patterns of behavior. CBT rests on the idea that thoughts and perceptions influence behavior. CBT aims to identify harmful thoughts, assess whether they are an accurate depiction of reality, and if they are not, employ strategies to challenge and overcome them. CBT is appropriate for people of all ages, including children, adolescents, and adults. CBT can be delivered effectively online, in addition to face-to-face therapy sessions. (David et. al , 2018, 4: 9)

Reasons for using cognitive behavior therapy in the current study:

- A- many previous studies have indicated the effectiveness of CBT in modifying behavior in general and attention disorders (Masoumeh, 2015, 120-127).
- B- Cognitive behavioral therapy is one of the theories that are rich in therapeutic methods. It helps children adapt their behavior and thus reduces their symptoms of attention deficit disorder
- C - Attention deficit disorder is one of the mental processes that are appropriate to the therapeutic methods of cognitive behavioral therapy.
- D - Cognitive behavioral therapy alleviates the problems caused by attention deficit in the school environment and family of children in general (Abd El Salam, 2011, pp.1549- 1633).

Methodology:

Design & Method of the Study: the current study is a semi-experimental design based on pre- post test for experimental and control groups.

Study Hypotheses:

The current study tested the following hypotheses:

- 1) There is no statistically significant difference between the mean score of the control group on the attention deficit disorder scale pre and post application.
- 2) There is a statistically significant difference between mean score of the experimental group on the attention deficit disorder scale pre and post measurements, favoring the post application.
- 3) There is a statistically significant difference between mean score of the experimental and control groups on the attention deficit disorder scale pre and post application, favoring the experimental group.

3-Tools of the Study :

1-The Scale of Gifted Children Personal Characteristics (Hamdy, S ,H 2004, pp.256- 285).

The scale aims at identifying gifted children's characteristics and consists of seven dimensions of (70) phrases which are achievement motivation, curiosity, independence, perseverance, leadership, perfectionism, risk, adventure, interest, practical and artistic skills. The researcher tested the scale for validity and reliability:

- Scale Reliability

The researcher measured the reliability of the scale using the test- retest method after a time interval of (15) days from the date of the first application. The scale was applied to (20) gifted children selected according to the characteristics of the study sample. The correlation coefficient of Pearson of the scale two applications was calculated where the R value was(.82) which proved the scale reliability.

- Scale Validity

The researcher applied the Personal Characteristics Scale for gifted children to two different gifted and ordinary children samples of (15) children each. The scale validity was proved as there were statistically significant differences between the mean scores of the two samples, as t value was (3,5), which is a statistically significant at 0.01 level.

The Attention Deficit Disorder Scale for Gifted Children(Al Nuby, 2009, pp.1-149)

The Scale consists of three dimensions. The first dimension is Attention Deficit Disorder. It contains nine items. In each item, the child is given an image and he has to choose another corresponding right image from four given images. The second dimension refers to hyperactivity and is expressed by (3) images; each has a proper correspondent phrase to be chosen. The third dimension refers to impulsivity and consists of four images ; three of them are similar and one is odd and the child has to choose the odd one out.

- Scale Reliability:

The researcher measured the reliability of the scale using the test- retest method after a time interval of 15 days from the date of the first application. The scale was applied to (20) gifted children . The correlation coefficient of Pearson of the scale two applications was calculated where the R value was(.72) which proved the scale reliability.

- **Scale Validity**

The researcher applied the Scale of Attention Deficit Disorder for gifted children to two different samples of (10) children each. The first sample was of the gifted children who suffer from attention deficit disorder, and the second sample was of the gifted children who do not suffer attention deficit disorder. There were statistically significant differences between the mean score of the two samples, where the value of t was (4.4); which is a statistically significant at 0.01 level.

Place Field:

The study was applied to El Salam elementary School for the following reasons:

- A - This school is one of the largest schools in the center of Riyadh in the governorate of Kafr El-Sheikh where the number of students is proper for conducting the study.
- B - The school is near to the residence of the researcher, which facilitates the application of the study.
- C- There are competitions at this school for the gifted students.

Sample:

After the application of the study conditions to a population of (50) gifted children with attention disorder, the study sample was 20 male **students** at the first, second and third primary stage who were randomly divided into two control and experimental groups of (10) **students** each the sample meets the following criteria:

- the child gets a high score on the scale of personal characteristics of the gifted.
- The child lives in a two- parent family with brothers and sisters.
- The child does not have disabilities.
- The child should be 7-10 years old.
- The child suffers no organic diseases that may affect his attention.

Convenient statistical procedures were used to calculate the homogeneity of the sample. Table (1) shows the homogeneity of the control and experimental groups pre-measurement mean score on the Attention Disorder Scale for Gifted Children:

Table (1): Pre- measurement of the Control and Experimental Groups on Deficit Disorder Scale for Gifted Children

Dimensions	Group	Mean	SD	Calculated t value	Significance
Attention disorder	Cont.	152.9	2.02	-.111	.852
	Exp.	152.8	1.98	-.111	.852
Hyperactivity	Cont.	64.6	1.34	1.4	.204
	Exp.	65.6	1.77	1.4	.204
Impulsivity	Cont.	43.6	1.34	-.572	.406
	Exp.	43.2	1.75	-.572	.406

It is clear from the previous table that the value of calculated t for all dimensions of the scale of the control and experimental group was statistically insignificant, which indicates the homogeneity of the control and experimental groups.

Professional Intervention Program:

Aims of the Program

- The main aim of the program was to alleviate the symptoms of attention disorder in gifted children.

Objectives:

- 1 - Alleviate the symptoms of attention deficit in gifted children
2. Relieve impulsive symptoms in gifted children
3. Alleviate the symptoms of hyperactivity in gifted children

Considerations for the professional Intervention Program Implementation:

1. There is a variation in the symptoms and severity of attention deficit disorder for gifted children
2. The therapist must take into account the cultural, economic and personal differences among children.
3. The practitioner should bear in mind the importance of environmental and family factors and their impact when dealing with children

Stages of the professional Intervention Program:

1. Identifying the gifted child by applying the Gifted Identification Scale
2. Determining the degree of attention deficit disorder of the gifted child through the pre- application of the Attention Deficit Disorder Scale.
3. Identifying the problems; resulting from the attention deficit disorder of the gifted child, to be addressed

4. Following up the progress of the professional intervention program progress as planned to, through some positive indicators
5. Terminating the intervention in accordance with objectives and duration of the professional intervention program.
6. Evaluating the results of professional intervention

Instruments of the Professional Intervention Program

The professional intervention program with attention deficit disorder children was based on group sessions for the following reasons:

- 1- Group sessions help acquire skills through competition between children
- 2- group sessions help the continuity of the acquired skills.

Therapeutic Techniques

The following therapeutic techniques were used and explained to the teacher in the classroom and to parents so that they could help modify the behavior of the student:

1. Positive reinforcement: depends on increasing the reinforcement of behavior after happening (Gabal, 2018. p.159) and this technique includes :

- a- Praise the **student** pupil when committing to sit in his place
- b- Provide material rewards such as candy or colored pencils to the **student** to attract his attention.
- c- Put the student's photo in the school excellence panel.
- d- Clap for the student when answering questions.
- e- Encourage student's gift.

2. Repeated training on activities that increase concentration and persistence, such as gathering images , classification of objects by shape-size-color- repeated writing, jigsaw and synthesis games.

(Al-Nubi, 2009. p.45). This technique includes:

- a- Instructions are placed on a clear board for pupils
- b- instructions are introduced in drawings explaining positive behavior for the pupils
- c- question repetition to the student during the session
- d- guide the teacher to be patient to give the opportunity to the pupil answer questions

3. Learning through modeling: It is intended to provide an explanatory model of the desired behavior and attract the attention of the child to follow and adhere

to the model (Al-Nubi, 2009. p.79). This technique includes:

- a-Present a model of behavior to be learned by the child like sitting with discipline in the class.
- b-Enter the room only after permission
- c-Greeting when entering - listening when talking - persistence in standing
- d-Reflect on the behavior
- e-Model the behavior

4. Homework: This technique includes:

- a- Assign the **student** to read some simple stories that focus on certain behaviors
- b-Write the behavior that parents prefer at home
- d-Encourage the **student** to show the manifestations of his gift: drawing, singing, synthesis

5.Researcher- pupil Rapport: This technique includes:

- a-Smile on the **student**
- b-Sit near the **student**
- c-Follow-up and asking about the **student**
- d-Showing no boredom towards the behavior of the **student**

6.Training: This technique includes:

- a- Train the **student** to arrange his bag
- b-Train the **student** to prepare a schedule for studying
- c- Help the **student** to organize and arrange the class
- d-Train the **student** on some exercise to reduce hyper activity

7. Negative Reinforcement: This technique includes:

- a- The researcher deprived the pupil from a reward for not responding during the session
- b-The teacher reduced the numbers of stars given to other **student** as a result of not listening carefully

8.Role Play: This technique includes:

- a-Help **students**, especially at the older age to represent the role of nursery teacher
- b-Guide them during the role representation to focus on positive behaviors such as listening while others talk
- c-Not to let **students** go out without permission
- d-Help the needy **students**

e-Pay attention to the **student** when talking and looking at him

Difficulties of the Intervention Program Implementation

- a- **Overcrowded classes**
- b- **Uncooperation of some families.**
- c- **Some teachers' refusal for the researcher's instructions**
- d- **The existence of many colorful paintings and classroom ornament that distracts students attention.**
- e- **The improper practice of activities at school.**

Results

The First Hypothesis

The first hypothesis was proved to be valid and Table (2) shows the differences between the pre and post measurements of the control group on the Attention Disorder Scale for Gifted Children.

Table (2): Pre and Post Measurements of the Control Group on the Deficit Disorder Scale

Dimensions	Pre-measurement		Post Measurement		Means	SD	Calculated t value	Significance
	Deviation	Mean	Deviation	Mean				
Attention disorder	15.6	.699	15.7	.82	.1000	.73	-.429	.678
Hyperactivity	6.9	.737	6,000	.816	.1000	.276	-.36	.726
Impulsivity	4.6	.016	4.6	.016	.000	.66	.000	1.00

Previous results from Table (2) indicated that at the 0.01 level there were no statistically significant differences between the mean scores of the control group on the pre and post measurements of the Attention Deficit Disorder Scale for Gifted Children.

The Second Hypothesis

The second hypothesis was proved to be valid and Table (3) shows the differences between the pre and post measurements of the experimental group on the Attention Disorder Scale for Gifted Children.

Table (3): Post- measurement of the Control and Experimental Groups on Deficit Disorder Scale for Gifted Children

Dimensions	Pre-measurement		Post Measurement		Means	SD	Calculated t value	Significance
	Mean	Deviation	Mean	Deviation				
Attention disorder	15.600	.699	10.8	.788	4.8	.62	24.0	.000
Hyperactivity	6.9	.73	4.5	.70	2.4	.699	10.9	.000
Impulsivity	4.6	3.7	.62	.60	.9	.99	2.86	.019

Previous results from Table (3) indicated that at the 0.01 level there were no statistically significant differences between the mean score of the experimental group on the pre and post measurements on the Attention Deficit Disorder Scale for Gifted Children, favoring of the post measurement.

The Third Hypothesis

The third hypothesis was proved to be valid and Table (4) shows the statistically significant difference between mean score of the experimental and control groups on the Attention Deficit Disorder Scale for Gifted Children pre and post application.

Table (4): Table (2): Pre and Post Measurements of the Experimental Group on Deficit Disorder Scale

Dimensions	Group	Mean	SD	Calculated t value	Significance
Attention Deficit Disorder	Cont.	13.2	2.6	-.16	.000
	Exp.	1.0	.51	-.16	.000
Hyperactivity	Cont.	5.7	1.48	-9.7	.000
	Exp.	1.5	.51	-9.7	.000
Impulsivity	Cont.	4.2	.74	-15.4	.000
	Exp.	1.5	.51	-15.4	.000

Previous results from Table (4) indicated that at the 0.01 level there were statistically significant differences between the mean score of the control and experimental groups on the post

measurements of the Attention Deficit Disorder Scale for Gifted Children.

Discussion:

Results of the first hypothesis indicated that at the 0.01 level there were no statistically significant differences between the mean score of the control group on the pre and post measurements of the Attention Disorder Scale for Gifted Children and its dimensions: Attention Deficit, Hyperactivity and Impulsivity, this was due to the control group was not exposed to the professional intervention program.

Interpretation of the second hypothesis results indicated at the 0.01 level that there were statistically significant differences between the mean score of the experimental group on the pre and post measurements of the Attention Disorder Scale for Gifted Children and its dimensions: Attention Deficit, Hyperactivity and Impulsivity, favoring the post measurement. This indicates the effectiveness of the professional intervention program as a cognitive-behavioral therapy to alleviate the symptoms of attention disorder for gifted children.

Results of the third hypothesis indicated that at the 0.01 level there were significant statistical differences between the mean score of the experimental and control groups on the post measurements of the Attention Disorder Scale for Gifted Children and its dimensions: Attention Deficit, Hyperactivity and Impulsivity, favoring the experimental group. This refers to the effectiveness of the professional intervention program as a cognitive behavioral therapy to alleviate the symptoms of attention disorder.

The current study agreed with the study of both **Sahmurova, A., Aylak, U, 2017** & He, J. Allison; Antshel, Kevin M, 2016 & Coelho et al, 2015 & Moodi, Masoumeh, 2015 in effectiveness of the cognitive-behavioral therapy to alleviate the symptoms of attention disorder for children in general.

The current study also agreed one study **Al-Nubi, 2009** the effectiveness of the professional intervention program as a cognitive-behavioral therapy to alleviate the symptoms of attention disorder for gifted children. I also agreed with her effectiveness some **therapeutic techniques** like **Positive reinforcement**, **Learning through modeling**

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