

Knowledge of Parents of Children with Autism Spectrum Disorder of Behavior Modification Methods and Their Training Needs Accordingly

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Received: March 5, 2016

Accepted: April 25, 2016

Online Published: September 28, 2016

doi:10.5539/ies.v9n10p141

URL: <http://dx.doi.org/10.5539/ies.v9n10p141>

Abstract

The study aimed at identifying knowledge of parents of children with autism spectrum disorder of behavior modification methods and their training needs accordingly. The sample of the study consisted of (98) parents in Jordan. A scale of behavior modification methods was constructed, and then validated.

The results of the study showed that the knowledge of the parents of children with autism spectrum disorder was medium. The highest percent was for satiation style, and the least for generalization style.

The study also revealed that parents need to be trained in six methods of behavior modification. The most important need was for generalization style then the effectiveness of reinforcement. Study finally revealed that there are significant differences in parents' knowledge of behavior modification due to parent's gender in favor of mothers but there were no significant differences due to parents' education, child's gender, and child's age.

Keywords: autism, parents, behavior modification, training needs

1. Introduction

Global attention began to autism began in 1943 by Leo Kanner, the term Autism was used in ancient times to refer to children who are characterized by limited social relationships with other people, and the evolution of this definition and diagnosis of autism developed over the years. The National Association for Autistic children in the United States updated the definition in 2011, where it pointed out that autism spectrum in different disorders: intensity, and symptoms, and the age at injury, and in its relationship with disabilities and other disorders (Alzeriqat & Al Daher, 2009).

Autism then was referred to at the moment in the Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition, DSM-5). Which was issued from the American Psychiatric Association (APA) that it is Autism Spectrum Disorder, ASD) and many changes on the definition of autism, most notably what comes on (APA, 2013).

- The use of one concept which is: Autism Spectrum Disorder (ASD) include (Esber Jr. syndrome and Autism and overall non-specific developmental disorders) and differences between these three groups in the severity of symptoms, behavioral, and language and IQ level.
- Diagnosis depends on only two Criteria: the first criterion is social communication and social interaction, and the second criterion is line behavior, interests and identified and repeated activities. While it was previously in the revised Diagnostic and Statistical Manual of Mental Disorders: Fourth Edition diagnosed according to three Criteria.
- Reduce the symptoms that the diagnosis is made on them as symptoms included five out of seven symptoms while it was in the fourth revised diagnosis symptoms six out of twelve symptoms.
- Determine the level of support, rather than the degree of intensity, so that the level of support according to the symptoms and behavioral in the criterion: social interaction and social networking, and criterion: behavior, interests and activities specific and repeated to make educational decisions and the amount of support and the type of services and rehabilitation, which must be submitted to the individual.
- Expand the age range in this category to extend to early childhood, rather than three years. Age is not required for the onset of symptoms, but is required to appear before the completion of 8 years. it is also

required that the performance career capita daily are not adversely affected as a result of these behavioral symptoms.

- Specialists disagree in the interpretation of autism spectrum disorder, as published scientific studies have failed to reach a conclusive result about the main cause of autism. Also there is diversity and difference in characteristics, not only among individuals with autism spectrum disorder, but also these characteristics differ when an individual himself from time to time, and the most prominent characteristics of autism spectrum disorder (Shami, 2004)
- Lack of emotional and passionate exchange
- Lack of nonverbal communication.
- Malfunction in the development of social relationships and maintain it at the level of evolutionary (old calendar) of non-familiar persons.
- Words or bodily movements or use of things typically or frequently.
- Attached with the habits and routine behaviors, both verbal and non-verbal communication and severe refused to change.
- Specific and fixed abnormal interests in terms of intensity and quality.
- Varied Sensory responses (high or low) or unusual sensory interests of things.

Many programs are provided for individuals with autism spectrum including: medical and sensory and food and musical and educational. Educational programs are mainly based on behavior modification programs. Applying the principles of behavior modification on a regular basis and effective viable is a solution to reduce the impact of these characteristics on the child's life (Khatib, 2014).

Most of the techniques used in behavior modification and turn-based Applied Behavior Analysis made its effectiveness clear, as it represents a clear opportunity for children with autism spectrum disorder in order to benefit from the training measures offered to them to be a supporting factor in achieving an appropriate behavioral response.

Parents varies in the amount of responsibility that they have towards their child than simply note his behavior to be considered complementary to the efforts of the special education teacher, Parents are the first teacher and the primary even if they were just observers, and it seems that the development of successful child programs are those that support parents in their role as educators of their children and working on strengthen their relationship with them. Parents are considered behavior modifiers, regardless of their knowledge and training. and this comes through their interaction with their children and provide guidance and instructions to them, so we must get to know the effective means to modify behavior that are based on scientific research and to abandon the methods that are feasible in dealing with their children (Khatib, 2001).

The following are the most important behavior modification strategies to be used with children with autism spectrum disorder (Khatib, 2014; Alzeriqat, 2007; Fatlawi, 2005; Al Daher, 2004; Khatib, 2003; Kerris et al., 2012).

- Reinforcement: the procedure in which the behavior leads to positive aftershocks or remove negative aftershocks, which increases the likelihood of behavior in similar situations, and classifies reinforcement to the positive and negative:
 - a) Positive reinforcement: is to add or make reinforcement after behavior directly leads to increase the likelihood of its occurrence in the future, which is most commonly used in behavior modification programs, and is typically used when they are learning new skills or other alternative behavior to increase appropriate behavior.
 - b) Negative reinforcement: it is the removal of undesirable reinforcement after the occurrence of unwanted behavior directly and it is a reinforcement that its removal leads to strengthen behavior, this kind of promotion is based on the positions and avoids painful stimuli and unwanted reinforcements.
- Prompting: a set of hints, instructions and signals and clarifications provided in order to increase the likelihood of behavior, and get a valid response, which is discriminatory triggers, which are added to original stimuli that occur naturally, and it appears indoctrination in several photos of it what is: verbal, or physical, or faith.
- Punishment: the procedure that reduces the rate of unwanted behavior. And there is no possibility of its occurrence in the future, through its application with or after the unwanted behavior immediately, and so it

based on adding a negative stimuli or remove stimuli or positive events (reinforced) after the occurrence of the unwanted behavior, and this leads to reducing the likelihood of that behavior in the future, and the punishment can be divided into two types depending on the results of behavior:

- Positive Punishment: depends on adding negative repellent effects when the emergence of the unwanted behavior.
- Negative punishment: it depends on the removal of stimuli enhanced when the emergence of the unwanted behavior.
- Extinction: stop the inappropriate behavior through the elimination of boosters that were tracking behavior in the past, and this method is called the planned ignored.
- Generalization: generalization occurs when a response that has been trained on occurred in a specific position and occurs in different situations, and this is called transfer of training effect.
- Chaining: the process of teaching the child complex behavior by defragmenting behavior to simple responses, and then train the child on those responses (or sub-skills) sequentially.
- Differential Reinforcement of Incompatible behavior, this procedure is used to stop the unwanted behavior, through the use of enhanced results to lower repeat this behavior occurrence, or the increase in the length of time in which that behavior does not occur, and this procedure can be used by making the requirements for obtaining a reinforcement more difficult.
- Exclusion and isolation from positive reinforcement (Time Out): It uses insulation to reduce the possibility of unwanted behavior in the future; this action refers to the removal of the individual from getting positive reinforcement for a specific period of time, not to exaggerate the child isolated for long periods of time.
- Overcorrection: a method to reduce the inappropriate behavior includes forcing the child to take responsibility for the results of his behavior, and training him on a replacement of behavior for that inappropriate behavior, and excessive correction is divided into two sections:
 - a) Situation correction: This procedure includes the restoration of the situation to what it was, and
 - b) Correction of vandalism, which occurred in the environment in which the behavior occurred to better than it was.
- Positive practice: This procedure includes the correction of unwanted behavior by repeating the correct behavior for a number of times, and after the occurrence of the unwanted behavior.
- Token Economy: a set of methods to modify the behavior that include employing Avatar boosters to achieve the desired goals, and this principle based on providing a list of avatar boosters that a person can get what he wants from it if he performs the desired behavior and replace it with supportive boosters.
- Stimulus Control: Adjust the environmental conditions in which the unwanted behavior happens.
- Behavioral Contracting: a written agreement between two or more, so that the two persons do agree on one of them to perform the behavior or set of behaviors versus reward obtained one from the other in exchange for his behavior in accordance with the conditions agreed in advance in the contract.
- Reprimanding: punitive style includes express their disapproval of the behavior of others scold the child may be verbally, or faithfully.

1.1 Problem of the Study and Its Questions

The knowledge of the parents of children with autism spectrum disorder of methods of modifying behavior represents the foundation stone in dealing with these children and evaluate their behavior, and it contribute to the social reintegration of behavior, and help identify training needs of those methods when designing training programs, and thus lead to the effectiveness of training and invest optimally. This will reflect positively on children with autism spectrum disorder.

This study attempted to answer the following questions:

- 1) What is the level of knowledge of the parents of children with autism spectrum disorder of methods of behavior modification?
- 2) What are the training needs of parents of children with autism spectrum disorder of methods for behavior modification?
- 3) Are there any statistically significant differences ($\alpha = 0.05$) in the level of knowledge of the parents of

children with autism spectrum disorder of methods for behavior modification attributed to variables: gender of the respondent, qualification of the parents? Age of the child with autism? The gender of a child with autism spectrum disorder?

1.2 Significance of the Study

Children with autism spectrum disorder shows many behaviors and characteristics that pose a challenge to all members of his family, especially his parents, and methods of behavior modification are considered viable solution in reducing these behaviors and characteristics, so it is expected that this study contributes theoretically in

- Provide information about the level of knowledge of the parents of children with autism behavior modification techniques, and training needs of those methods.
- Provide a reliable and valid tool that can be used by researchers, and decision makers.

In practice in:

Providing data to researchers and decision-makers about the needs of the parents of children with autism spectrum disorder for workshops, and training sessions for behavior modification techniques, which will reflect positively on the services provided to their children. And contribute to their arrival to the maximum extent permitted by their potential especially it is proven that education and training is the basis for therapeutic and educational intervention for these children.

1.3 Justification of the Study

Since the essence of behavior modification programs, programs for children with autism spectrum disorder, the most important justifications for this study:

- Parents' need for training due to eradicate child with autism disorder most of his time in his home and among his family.
- Most special education programs focus on training the child, and not giving enough attention to training for parents.
- The limited number of studies that addressed the extent of knowledge of the parents of children with autism behavior modification techniques, and the extent of the training needs of those methods.

1.4 Procedural Definition of Terms

- Methods of behavior modification: systematic application of the principles of learning when dealing with a child with autism spectrum disorder.
- Knowledge of the methods of behavior modification: It means in this study, the degree of the respondent on any paragraph of the scale or his total degree on the scale that measures methods of behavior modification.
- Training needs of the methods of behavior modification: necessary methods to modify the behavior in dealing with a child with autism spectrum disorder and that are not mastered by a parent. The need for training intended in this study is the degree of occurrence which is less than the percentage of 50% in any paragraph of the scale.
- A child with autism spectrum disorder: the child who is enrolled in one of the autism programs, which was officially diagnosed that he has autism spectrum disorder according to the report of the diagnosis of disability centers in the Hashemite Kingdom of Jordan.

1.5 Borders of the Study

The limits of the study in the temporal and spatial conditions that carried them and the sample of the study were chosen purposefully of the parents of children with autism spectrum disorder enrolled in the programs and the ranks of autism in the city of Amman and Zarqa.

1.6 Study Limitations

The study highlighted the determinants in: use a range of methods of modifying behavior. The study tool doesn't cover all methods of behavior modification, in addition to the representation of each method with one paragraph from the paragraphs of the scale which was prepared for this study.

2. Literature Review

Many studies on the effectiveness of behavior modification programs for children with autism spectrum disorder was conducted, but at the researcher's knowledge—there is a limited number of studies that have investigated the

parents' knowledge of the methods of behavior modification, and the extent of their needs for training on these methods, the most prominent of these studies:

Beers et al. (2015) study aimed to compare the effectiveness of a training program among two sets of the parents of children with autism spectrum disorder to reduce the chaotic behavior among their children, and the number of the experimental group was (89) fathers enrolled in a training program that includes methods of behavior modification, while the number of the control group was (91) fathers enrolled in a training program also, but it is traditional and does not include methods to modify the behavior, this study was conducted at six medical centers in America. The training program consists of (17) sessions while the traditional program consists of (13) sessions. Results of the study showed the effectiveness of the training of the parents of children with autism on the methods of behavior modification, where chaotic behavior decreased among the sons of experimental group at a rate of (47.7%), and among the sons of the control group with a rate of (31.8%).

In a study by La Prime and Dittrich (2014) for the effectiveness of the treatment package shaped through training of separate attempts and differential reinforcement accompanied with the cost of response and social story in reducing the typical verbal behavior in a child with autism spectrum disorder in pre-school, the study was applied in kindergarten governmental class in America. With the participation of their teachers for five months. Standard design variable was used in the study. The study results showed a marked and clear decline in typical verbal behavior in children compared to the line-base at the beginning of the study.

The aim of a study carried out by Peerce (2014) is to determine the effectiveness of training the members of the families of children with autism on strategies to support positive behavior in reducing behavioral problems exhibited by children with autism disorder and this is among (19) members of the children with families of autistic disorder (11 Adults and 8 children), and the training continued for 12 sessions, information was collected before and during the training, and follow-up after 12 weeks. The study results showed that parental involvement in training increases their ability to understand the behavior of their children and modify it.

Al Doaida (2013) investigated the level of importance and use of parents of students with autism disorder of the methods of behavior modification, and the impact of variables (gender, and degree of autism for children, educational level, and training) at this level, and the number of members of the study was (70) parents (30 fathers, 40 mothers) who have sons with autism disorder in the cities of Jeddah and Riyadh in Saudi Arabia. and the results showed that parents of students with autism have given high level of importance for all the paragraphs of the tool, and the results showed no statistically significant differences in the total scores of the importance and use of behavior modification strategies attributed to the gender, or the degree of autism for children, or the level of parent education and training he was exposed to.

In a study by Reagan and Higbee (2009) aimed to train three mothers of children with autism spectrum disorder on planning for indoctrination style, implementing it and concealed it by using the written text for the development of the initiative to speak verbally on their children. Indoctrination and cover-ups were used during play sessions, study results showed the effectiveness of the three mothers in the application of a method to modify the behavior of indoctrination and cover-ups in increasing verbal utterance among their children with an Autism disorder in the House. Where the three children showed clear progress in the verbal utterance after the follow-up phase, which lasted for two weeks.

A study carried out by the Arnous (2007) to see the effect of modifying behavior program in reducing behavioral patterns of three autistic children in Jordan, and the researcher used three methods of behavior modification (differential reinforcement of alternative behavior, exclusion, sensory repellents), and following the approach to search a single case, the effectiveness of the behavioral measures followed in the program to reduce the behavioral patterns of the three children.

Gena et al. (2005) compared the effectiveness of videotaped modeling method and live modeling and both styles of behavior modification whether accompanied by constant reinforcement and indoctrination procedures. The study was applied on three autistic children in pre-school education to teach them many behaviors at home and during play sessions. The researchers used multiple baselines design and the study results showed that both styles of modeling are effective in providing the three children important behaviors to generalize responses on other new positions and over other people. As the follow-up to the three children after three months of training, the researchers found the retention of children's educated behaviors.

The Khafsh (2005) in his study addressed the characteristics and behavior problems exhibited by Autistic individuals in Jordan and the methods of dealing with them by teachers and parents. The members of the study were (112) Autistic individuals and (24) teachers and (12) parents. The results showed that the most commonly used methods with the parents to deal with the behavioral characteristics is the diet and physical connectivity

then struck the child.

Symon (2005) designed a training program for the parents of three autistic children in America. Their children suffer from negative behaviors (aggressive behavior, stereotypical behavior, lack of interaction with others). The training program lasted for a week. The study results showed the effectiveness of the parents as trainers for their children with autism, where the behavioral problems decreased, and the social and verbal communication improved in children, and parents were also able to teach the siblings of the autistic child behavior modification techniques which they were trained in the program.

Murphy and Tierney (2005) conducted a study in the United States aimed to detect educational needs and the need for information among the parents of children diagnosed with autism spectrum disorder. The members of the study were (48 members: 37 mothers and 11 fathers) have been distributed into six discussion groups. Where the six groups received training for 16 hours, two hours a week for two months. The training program included in each discussion panel to provide scientific summaries for use by participants in the discussions, the results of the study has concluded that there is a need for information on how to diagnose, evaluate and methods of therapeutic overlap, the results of the study also showed the parents' need to know the best educational services for their children, and educational methods they can use when teaching their children at home.

In a study by Crockett, et al. (2005) they designed an intensive program to train parents of two children with autism spectrum disorder on teaching skills with separate attempts and provide the children with autism spectrum disorder with it then generalize it, and the results showed that parents taught their two children four separate functional skills that have been generalized later.

When reviewing previous studies, many of which focus on the needs of families like Murphy and Tierney (2005), and the study of Ellis et al. (2002).

While some of the studies dealt with the effectiveness of training the parents on methods of behavior modification to reduce inappropriate behaviors for children with autism spectrum disorder, and giving them new behaviors, and these studies are: Bearss et al. (2015), Laprime and Dittrich, (2014), Preece (2014), Reagon and Higbee (2009), Symon (2005), Crockett et al. (2005), and other studies (Aldoaidh, 2013; Khafsh, 2005; Qumsh, 1994) tried to know behavior modification methods used by families with their children with special needs.

3. Design and Methodology

3.1 Sample of the Study

The number of members of the study was (98) individuals (37 fathers and 61 mothers) who were selected from the parents of children with autism spectrum disorder who register their children in a program or a class or center of autism centers in the cities of Amman and Zarqa in Jordan. Table 1 shows the distribution of individuals according to the study variables.

Table 1. Distribution of study sample

Variable	Category	Number	Percentage
Respondent	Father	37	37.8%
	Mother	61	62.2%
Total		98	100%
The educational level of parents	Secondary stage and below	37	37.8%
	Diploma of community colleges	24	24.5%
	Bachelor degree	35	35.7%
	Higher education	2	2%
Total		98	100%
Child's age	Less than 6 years	44	44.9%
	6-12 years	49	50%
	13-18 years	5	5.1%
Total		98	100%
Gender	Male	75	76.5%
	Female	23	23.5%
Total		98	100%

3.2 Instrument of the Study

To achieve the objectives of the study, the researcher prepared a scale for parents of children with autism spectrum disorder knowledge of methods to modify the behavior according to the following steps:

- Review of the literature on the methods of behavior modification used with children with autism spectrum disorder, and how to implement these methods, and conditions of use.
- Conducting a pilot study of seven mothers from outside the members of the study. The question arises: What is the method do you use to modify the behavior your child with autism spectrum disorder.
- Choose methods of modifying behavior that could be used by parents with children with autism, it has been reached (22) method.
- Framing the scale paragraphs by putting each paragraph of the scale - methods of modifying behavior- in a practical situation and identify for every position four alternatives (One alternative is true and three false alternatives).
- Reaching a preliminary version of the scale and it consisted of (22) items.
- To reach a reliability and validity of the scale.
- Amendment of scale paragraphs based on the opinions of specialists arbitrators in terms of: the clarity of print, delete and add some paragraphs.
- Preparing the final version of the scale, which consists of 18 items distributed among the main methods of modifying behavior.
- Calculation of the total score of the scale by giving correct alternative one degree while the three wrong alternatives given the degree zero. Thus, the maximum degree of the scale was (18) while the lower level is zero.
- The percentage of the knowledge of the parents of children with autistic disorder less than the percentage of recurrences (50%) of any paragraph of the scale was considered a training need.

3.2.1 Scale Validity

To check the validity of the scale it has been introduced in its initial image on ten especial education experts, especially those who hold the doctorate degree in special education in: University of Jordan and the Hashemite University and the University of Mutah, and they were asked : judgment on the suitability of each paragraph of

the scale of the method of behavior modification which it measured by and how safe the wording of paragraph and its linguistic clarity, and the suitability of alternatives to life situations.

The paragraphs that have been agreed on from (80%) or more of the arbitrators have been retained, the most prominent notes of arbitrators: Clarification of some examples or merge, delete or modify the formulation of each other. The number of paragraphs deleted from the initial version scale were (4) paragraphs and thus the scale in its final image consists of (18) items.

3.2.2 Scale Reliability

The reliability of the scale was verified through test/retest, as the scale has been applied on (20) fathers and mothers from outside the members of the study, and the scale was re-applied on the same group with time interval of three weeks, Pearson correlation coefficient was calculated between the first application and the second application, the total score reached (0.79), the reliability coefficient was also calculated using internal consistency coefficient using Cronbach Alpha coefficient, where the overall correlation coefficient reached (0.86).

3.3 Procedures of the Study

To achieve the objectives of the study, the researcher did the following steps:

- Review the literature of behavior modification used with children with autism spectrum disorder.
- Preparing the scale of study and verify its validity and reliability.
- Identify Autism centers and programs in the city of Amman and Zarqa, which the study will be applied on.
- Distribution of the scale among (105) parents of children with autism spectrum disorder, collect it back, and check the answers, and re-distribute incomplete papers to be supplemented. The number of bounced scales was (98) Scales with a percentage of (93.3%).
- Enter data using a computer and perform statistical processing.
- Extract the results and discuss it.

3.4 Statistical Analysis

This study is the descriptive study aimed to determine the knowledge of the parents of children with autism spectrum disorder with behavior modification techniques and their training needs of those methods.

To answer the first study question: means and percentages of occurrences of each paragraph of each item of the scale and the overall scale.

To answer the second question: the percentage (50%) of knowledge of behavior modification methods is the minimum required skill, so the ratio which is less than (50%) represents a training need.

To answer the third question: one-way analysis of variance was used for both: Qualification of parents (secondary or below, Diploma Community College, Bachelor degree, Higher education), and for the age of a child with autism spectrum disorder (less than 6 years, 6-12 years, 13-18 years). While "T" test was used for independent samples: the gender of each of: the respondent (father, mother) and a child with autism spectrum disorder (male and female)?

4. Results of the Study and its Discussion

The present study aimed to determine the knowledge of the parents of children with autism spectrum disorder of behavior modification techniques and their training needs of those methods, the following are the results of the study and its discussion:

The first question: What is the level of knowledge of the parents of children with autism spectrum disorder of behavior modification methods?

To answer this question frequencies and percentages for each paragraph of the study scale were calculated and ranked in descending order, and Table 2 shows that:

Table 2. Means and frequencies and percentages of the knowledge of the parents of children with autism spectrum disorder of methods to modify the behavior arranged in descending order

Arranged according to Frequency	Skills	Means	Frequency	Percentage	Number of skill in the scale
1	Satiated	0.081	79	80.60%	9
2	Indoctrination	0.08	78	79.60%	12
3	The concept of consolidation	0.79	77	78.60%	16
4	Task Analysis	0.076	74	75.50%	14
5	Forming behavior	0.079	68	69.40%	13
6	Modeling	0.068	67	68.40%	17
7	Brimak Principle	0.066	65	66.35%	6
8	Extra Correction	0.66	65	66.35%	7
9	Plus Differential reinforcement of absence behavior	0.57	56	57.10%	4
10	The concept of punishment	0.57	55	56.10%	8
11	Discrimination	0.51	50	50.10%	10
12	Extinguish of behavior	0.50	49	50%	3
13	The cost of the response	0.46	45	45.90%	5
14	To change booster	0.45	44	44.90%	11
15	Effectiveness of punishment	0.39	38	38.80%	2
16	Exclusion	0.39	37	37.80%	15
17	The effectiveness of booster	0.31	30	30.60%	1
18	Generalization	0.21	21	21.40%	18
	Total scale	10:32	998	56.58%	

As seen from the Table 2 the arithmetic mean of the estimates of members of the study on the scale as a whole (10.32) with a percentage of (56.58%), and this percentage suggests that the parents of children with autism spectrum disorder knowledge of behavior modification methods was on average limits. while the arithmetic mean of estimated responses of the study individuals on the scale paragraphs ranged between (0.21-0.81), as the percentage of frequencies ranged between(21.40-80.60)%, and the highest arithmetic mean was for satiated method (0.81) and the percentage of occurrences was (80.60%), followed by the memorization method with a mean of (0.80) and percentage (79.60%), and the lowest occurrences attributed to Generalization style with a mean of (0.21) and percentage (21.40%), that is less familiar to parents, followed by the effectiveness of the reinforcement with a mean of (0.31), and a percentage (30.6%).

The parents' medium knowledge can be interpreted with general ways of behavior modification because children with autism are showing a lot of unwanted behaviors. Making parents trying various ways to reduce them, and as a result, of these attempts, research and inquiry and training they learn many methods to modify the behavior. The main teaching methods used in the programs and centers for autism education is behavior modification. The reason for their knowledge of saturation method in their attempt to compensate the child for the problems faced by the inability to express their needs in a verbal or signs to meet all his needs. Relating the indoctrination, parents were accustomed to providing assistance for their children to learn at the beginning of each new skill, in an effort to help them overcome the difficulties they face.

The second question: What are the training needs of parents of children with autism spectrum disorder for methods of behavior modification?

To answer this question the percentage of occurrences of 50% was adopted to represent the minimum limit required for the method of behavior modification, and Table 3 shows the means and frequencies and percentages of the most important training needs of the parents arranged according to the need degree.

Table 3. Means and frequencies and percentages for the training needs of parents of children with autism spectrum disorder of behavior modification techniques

Need for modification method	Skills	Means	Frequencies	Percentage	Number of skill in scale
1	Generalization	0.21	21	21.40%	18
2	Reinforcement schedules	0.31	30	30.60%	1
3	Exclusion	0.39	37	37.80%	15
4	Effectiveness of punishment	0.39	38	38.80%	2
5	Changing Booster	0.45	44	44.90%	11
6	The cost of the response	0.46	45	45.90%	5

Table 3 shows the existence of a training need for parents in six skills out of eighteen skills included in the scale and they are arranged as follows: Generalization and got a mean of (0.21), and the percentage of occurrences (21.4%), then the effectiveness of the reinforcement with a mean of (0.31) and percentage of occurrences (30.60%) exclusion with a mean of (0.39) and percentage (37.8%), the effectiveness of the punishment with a mean of (0.39) and percentage (38.7%), changing booster with a mean of (0.45), and got a percentage (44.9%), the cost of responding with a mean of (0.46), and got a percentage of (45.90%). low knowledge of generalization method is attributed to poor communication and effective coordination between teachers and families, so each one's effort does not complement each other's efforts, and thus it represents a training need for them. As the low knowledge of effectively reinforcing, families used to provide reinforcement for their children, but they don't know how to introduce the booster to be effective.

To answer the third question: Are there any statistically significant differences ($\alpha = 0.05$) in the level of knowledge of the parents of children with autism spectrum disorder of ways to modify the behavior attributed to (responder's gender, qualification for the parents, the child's with autistic disorder age, the gender of a child with autism) ?

Results related to difference in the parents knowledge of skills to modify the behavior depending on the gender of the respondent:

Means and standard deviations were extracted for the members of the study at the macro scale, according to the gender of respondent variable (father, mother). "T" test was used for independent samples, to test the significance of differences between these means, and so at the level of statistical significance ($\alpha = 0.05$) and the results were as shown in Table 4.

Table 4. The results of "T" test to reveal the significance of differences between the mean scores of members of the study on the scale of the study, according to the variable of respondent's gender (father, mother)

Respondent	N	Mean	Standard deviation	T value	df	Sig
Father	37	10.03	3.28	-2.29	82.29	0.025
Mother	61	11.66	3.64			

As shown in Table 4 that there is an ostensible difference in the arithmetic mean of the estimates of the respondents to the knowledge of the behavior modification skills, according to the gender of the respondent (father, mother), and by using "T" test for independent samples it was clear that the differences between the means are statistically significant as the value of calculated "t" was (-2.29), which is a statistically significant value at the significance level ($\alpha = 0.05$) which means that knowledge of skills to modify behavior is equal for both fathers and mothers, and by reference to the arithmetic mean in table (4) it is clear that the differences in favor of mothers as the arithmetic mean of the mothers was (11.66), while the mean for fathers was (10:03). This means that mothers are more familiar with ways to modify the behavior than the fathers and therefore, they need less training to those methods. This can be explained that mothers spend much time with their children at home

while fathers spend most of their time at work so that mothers follow their children more than fathers in addition to the possibility of receiving the mothers of many training courses.

Results for the different knowledge of the parents of children with autism spectrum disorder of methods to modify the behavior attributed to the educational qualification of the parents variable?

Arithmetic means and standard deviations for the sample grades at the macro scale were extracted according to their level of education (secondary and below, Community College Diploma, Bachelor, Higher education) as shown in Table 5.

Table 5. Means and standard deviations to estimate knowledge of parental of behavior modification skills according to their educational level

Variables	N	Mean	Standards deviation
Secondary and below	37	10:43	3.8
Community colleges diploma	24	10:33	3.17
BA	35	12:31	3.4
Higher studies	2	8.5	0.71
Macro scale	98	11:04	3.58

Table 5 shows the existence of apparent differences in the arithmetic mean of the estimates study individuals to see the parents skills to modify the behavior according to the educational level variable, and to find out whether the virtual differences between the means of the sample estimates in light of educational level is statistically significant or not. The one-way analysis of variance test (ANOVA) was used at the significance level ($\alpha = 0.05$), and the results were as in Table 6.

Table 6. One-way analysis of variance to detect the significance of differences between the means of individuals of the study to know behavior modification skills, according to the variable of educational level of parents

Source of variance	Sum of squares	Df	Mean of squares	Calculated F	Sig
Between groups	95.38	3	31.79		
Within groups	1146.46	94	12.20	2.607	0.056
Total	1241.84	97			

As seen in Table 6, there were no statistically significant differences at the level of significance ($\alpha = 0.05$) in the members of the study knowledge of skills to modify the behavior according to the level of education of the parents variable, as the value of calculated "f" was (2.607), a value that is not statistically significant when significance level ($\alpha = 0.05$) which means there is no difference in parental knowledge of skills to modify the behavior attributed to their level of education. It is doesn't mean that the person who is more educated is more knowledgeable in his field.

Results for the different knowledge of the parents of children with autism spectrum disorder in ways of behavior modification due to the variable the child's with autism age?

Means and standard deviations were extracted for individual of the study degrees at the macro scale according to the age of a child with autism (younger than 6 years, 6-12 years from 12 to 18 years) as described in Table 7.

Table 7. Means and standard deviations, to estimate knowledge of parents of behavior modification skills according to the child's with autistic disorder age

Variables	N	Mean	Standard deviation
Younger than 6 years	44	10.41	3.22
From 6-12 years	49	11.51	3.86
From 12-18 years	5	12	3.39
Macro scale	98	11.04	3.58

As seen from Table 7 there are apparent differences in the means of estimates study individuals to know the parents knowledge of behavior modification skills according to the age of the child with autism spectrum disorder variable, and to find out whether the virtual differences between the means of individual estimates from the study in light of the age of the child with autism spectrum disorder were statistically significant differences and One-way analysis of variance test (ANOVA) was made at the significance level ($\alpha = 0.05$), and the results were as in Table 8.

Table 8. The results of One-way analysis of variance to detect the significance of differences between the means estimated of individuals in the study to know behavior modification skills, according to the variable of the child with autism spectrum disorder age

Source of variance	Sum of squares	Df	Mean of squares	Calculated F	Sig
Between groups	32.96	2	16.48		
Within groups	1208.881	95	12.73	1.295	0.28
Total	1241.84	97			

As seen in Table 8 there were no statistically significant differences at the significance level of ($\alpha = 0.05$) in the members of the study knowledge of the skills to modify the behavior according to the age of the child with autism spectrum disorder variable, as the value of calculated "F" was (1.295), this value is not statistically significant at the significance level of ($\alpha = 0.05$) which means there is no difference in knowledge of behavior modification skills due to the age of a child with autism spectrum disorder. This can be interpreted that a child with autism spectrum disorder needs to modify his behavior at every stage of chronological stages of his life. Every stage has its own problems which require the use of behavior modification programs.

Results related to the different knowledge of the parents of children with autism spectrum disorder in behavior modification skills depending on the gender of a child with autism spectrum disorder (Male, Female):

Means and standard deviations of the sample scores at the macro scale, according to the variable of the child's gender (Male, Female) were extracted. "T" test was used for independent samples, to test the significance of differences between these means, and so at the level of statistical significance ($\alpha = 0.05$) and the results were as shown in Table 9.

Table 9. Means and standard deviations of the parents estimated knowledge of behavior modification skills according to the child's gender variable (Male, Female)

Respondent	N	Mean	Standard deviation	Calculated T	Df	Sig
Male	75	11.01	3.76			
Female	23	11.13	2.97	-0.155	45.61	0.88

As shown in Table 9, there is a simple ostensibly difference in the estimated means of study members for the training needs in behavior modification skills, according to the child's gender variable (male, female), and by using "T" test for independent samples it showed that the differences between the means are not statistically significant, where the value of calculated "T" reached (-0.155), which is not statistically significant value at the significance level ($\alpha = 0.05$) which means the knowledge of behavior modification skills among parents do not

vary according to the fact that a child with autism is male or female. This may be due to the child, whether male or female, is exposed to many of the problems that require behaviorally intervention.

The results of the study are consistent in the training needs of parents' behavior modification skills with the results of Bearss et al. (2015) study and Aldoaida (2013), Ellis et al. (2002) and Murphy and Tierney (2005).

5. Recommendations

In light of the results of the study by the researcher recommends:

- Conducting more studies dealing with a child with autism spectrum disorder arrangement, courses received by parents.
- Conducting practical training programs for members of the families of children with autism spectrum disorder focuses on behavior modification techniques that the results indicated that they need training.

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