



The effectiveness of an early intervention program for people with autism spectrum disorder based on applied behavior analysis techniques to equip them with self-care skills.

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Abstract- The aim of the study was to identify the effectiveness of an early intervention program based on the techniques of applied behavior analysis to provide self-care skills for people with autism spectrum disorders. The sample of the study consisted of (36) children from special education centers in the city of Irbid in Jordan. Their ages ranged between (4-6) years, and their IQ score ranged between (55-69) degrees. The study sample members were divided into (3) groups, two experimental groups, and a control group in each of them (12) children. To achieve the goal of the study, the researcher prepared a scale of self-care skills, and a training program based on techniques of applied behavior analysis to reduce unwanted behaviors to acquire self-care skills. The validity and reliability of the study tools were verified, and the quasi-experimental design was used, and the results of the study showed the effectiveness of the training program in imparting and developing self-care skills for children with autism spectrum disorders, and the results of the study showed statistically significant differences at the level of ($\alpha = 0.05$) between the mean The ranks of the scores of children on the autism spectrum in the experimental and control groups on the Self-Care Skills Scale are due to the training program and in favor of the indoctrination strategy, and to the presence of statistically significant differences at the level ($\alpha = 0.05$) between the average ranks of the scores of children on the autism spectrum in the experimental and control groups on the Self-Care Skills Scale Attributable to the training program and in favor of the formation strategy. The study also showed that there were statistically significant differences at the level of significance ($\alpha = 0.05$) between the indoctrination strategy on the one hand, and both the formation strategy and the control group on the other hand, and the differences came in favor of the indoctrination strategy.

Key words: applied behavior analysis strategies, indoctrination and shaping, self-care skills, autism spectrum disorders.

I. INTRODUCTION:

Interest in early intervention increased after the signing of the Convention on Human Rights and the Rights of the Child, which stipulates the right of children to obtain what they need from health services and aspects of psychological, social, life and academic care, regardless of their age, as early intervention services contribute to preventing or mitigating as much risk factors as possible That interferes with the child's developmental process, whether it is physical, healthy, cognitive and cognitive. (U.S. Department of Education, 2013; (IDEA, 2011).

The field of special education is witnessing a clear interest at the present time, and this interest has been represented in developing programs and services, working cadres, and strategies for measurement, diagnosis and teaching. In light of a set of standards and indicators that control special education processes with the aim of ensuring the provision of quality services and programs, and improving the quality of life of children with disabilities. Autism spectrum disorders are among the disabilities that receive the attention of researchers and specialists. Their impact is not limited to just one aspect of the personality of a child with a disability; Rather, it includes various aspects, including cognitive, social, linguistic, and emotional, and their influence does not stop at this point, but extends to include the families of these children and society as a whole. (Al-Khatib, Akef, 2014).

The development of the groups included in the name of Comprehensive Developmental Disorders (PDD), which was mentioned in the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV-TR), has had the effect of effecting a change in the category of autism disorder, which prompted the specialized committee to prepare the fifth edition To change the name to become Autism Spectrum Disorders (ASD) (Al-Jabri, 2014). Therefore, Rett syndrome was excluded from the categories of ASD, because it is a genetic cognitive disorder caused by a gene (MeCP2) (Machado, Caye, Frick & Rohde, 2013).

The diagnostic procedures included in the fifth edition of the Diagnostic and Statistical Manual (DSMV) aim to eliminate ambiguity and the overlap between these disorders according to the number and severity of symptoms, so it included the new name for Autism Spectrum Disorders (ASD), on what was previously known as Autism Disorder (www). Autismspeaks.org).

Autism spectrum disorder (ASD) is one of the most ambiguous developmental disabilities because the direct causes are not known. It is a condition characterized by a group of symptoms that are dominated by the child's preoccupation with himself and his severe withdrawal, in addition to the deficit of his social skills, independence, and caring skills. Especially, and his lack of verbal and non-verbal communication, which prevents him from effective social interaction with those around him (Yahya, 2014). The American Psychiatric Association (APA) Diagnostic and Statistical Manual Fifth (DSMV) defines autism spectrum disorders as a neurological disorder characterized by decreased communication and mutual social interaction, limitations, and repetitive behavioral patterns (DSMV, 2013).

As a result of the characteristics of autism spectrum disorders, it negatively and significantly affects the learning of children on the autism spectrum, and their acquisition of self-care skills such as dressing, eating, using the bathroom, and brushing teeth. The deficiencies in the skills of dressing and undressing, eating, using the bathroom, and brushing teeth are among the basic skills for developing self-care skills, as it prepares the individual for self-respect and independence. Children easily acquire these skills through observation of others or accidental learning. As for children with autism spectrum disorders, they understand They need direct instruction of these skills, and the formation of clear responses through learning programs and procedures (Sooryal, Rnstein, Gilis, & Remanczyk, 2003).

In the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), the American Psychiatrists Association defined criteria for diagnosing autism spectrum disorders as follows: (1) Persistent deficits in social communication and social interaction in the child's life, behavioral patterns, or Interests, useful or repetitive activities. (2) Symptoms should appear in the early developmental period (from birth to eight years of age). Symptoms cause clear impairment and limitations in social areas, independence skills, self-care skills, professionalism, and other important areas of job performance for people with autism spectrum disorder. (American Psychiatric Association DSM V, 2013).

The studies confirm that all children with autism spectrum disorders need to learn independent life skills, through training programs on self-care skills, and the development of the ability to successfully adapt to the various requirements of daily life, which are essential skills for building other forms of later skills, such as academic skills. (MacDonald, Dickson, Martineau, & Ahearn, 2015), and levels of adaptive behavior related to social quality of life, and self-determination.

Applied behavior analysis is used to teach children with autism disorder new skills, how to behave in social situations, and familiarize them with some life skills, including: Self-care skills that help to interact and communicate with others. Early behavioral intervention is considered one of the approaches that most contributed to the development of children with autism spectrum disorders and the growth of their skills. The researcher believes that modifying the behavior of autistic children by repetition, indoctrination, formation, reinforcement and other methods and methods will positively affect their interaction with others. And that the educational literature indicates that behavioral intervention is the most effective way to develop and develop one's skills (Al-Zureikat, 2016).

Al-Daghistani (2011) believes that children with autism respond to well-prepared programs that meet their needs and develop their social, daily, vital and functional skills. One of the basics of early intervention is training children on daily self-care skills at an early age, according to Mayo Clinic reports (MayoClinic, 2006) in treatments. The most common and effective ones are: communicative behavioral programs, self-care and social skills, complementary therapy and drug therapy.

Many studies have proven the possibility of training children with autism disorder and teaching them life skills, modifying their behavior, treating them and integrating them into regular schools, and that the skills that must be acquired and strengthened for children with autism spectrum disorders in order to treat them, and their integration into society and regular schools are self-independence skills, and purposeful behavior And communication, social skills, and some pre-academic skills. Among these studies are the study of (Al-Nabi and Awad, 2019; Al-Beri, 2017; Junaid, 2018; Sheikh Deeb and Muhaidat, 2013; Mechling, Ayres, Foster, & Bryant, 2013; Kawthar and Awad 2012; Al-Daghistani, 2011, Lal. 2010; and Al-Salami, 2010).

The study Problem:

Developing self-care skills is important for an individual to have self-esteem, independence, and the ability to integrate into society, and if children with autism spectrum disorders acquire self-care skills such as dressing, eating, using the bathroom, and brushing teeth, they will be able to live independently across environments. Multiple and enhanced self-learning opportunities. Also, having self-care skills greatly impacts an individual's support and need for work, school and community environments. Studies have indicated the effectiveness of applied behavior analysis in building a wide range of important skills and reducing behavior problems in children with autism spectrum disorder. In addition, many global programs in early intervention intervention have proven effective in developed countries, which are mainly based on the analysis of applied behavior and its techniques, especially training programs for self-care and independence skills. Studies have indicated that there are a number of strategies for applied behavior analysis that can be used in modifying the behavior of children with autism spectrum disorders, such as: indoctrination, shaping, imitation, reinforcement, exclusion and other methods of applied behavior analysis (Stahmer, 2007).

Therefore, the problem of the current study arose out of using the two methods of applied behavior analysis analysis (indoctrination, formation) in imparting self-care skills to a sample of children with autism spectrum disorders in Jordan. Specifically, the current study sought to answer the following questions:

The first question: Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in imparting self-care skills in the pre and post measurements between the control group and the experimental group due to the effect of using the teaching strategy (indoctrination, control)?

The second question: Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in imparting self-care skills in the pre and post measurements between the control group and the experimental group due to the effect of using the teaching strategy (formation, control)?

The third question: Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the effectiveness of the strategies of formation and indoctrination in imparting self-care skills?

Importance of the study:

Theoretical importance:

1-It is hoped that this study will help in formulating general policies related to the field of training programs and services provided to people with autism spectrum disorders in Jordan, and in developing and implementing programs and services efficiently and effectively.

2-This study opens new horizons for researchers to conduct more studies related to the category of autism spectrum disorders in order to improve the level of training programs based on applied behavior analysis, and the services provided to children with autism spectrum disorders in Jordan.

Applied importance:

The application importance of the current study shows the possibility of benefiting from the programs designed to provide self-care skills for children with autism spectrum disorder, as well as benefiting from the findings of the study when preparing other programs to impart self-care skills for the same group, and to provide researchers, interested persons and those in government and private institutions for How to

prepare training and educational programs for this category, using applied behavior analysis (shaping and indoctrination) to equip them with self-care skills.

Study objectives: The current study aims to:

- Preparing a training program based on applied behavior analysis to provide some self-care skills for people with autism spectrum disorders.
- Disclosing the effectiveness of the proposed training program and its role in imparting self-care skills for children with autism spectrum disorder.

Theoretical and procedural definitions:

Applied Behavior Analysis (APA): It is the science concerned with the orderly application of the set of laws and principles based on learning theories and the science of human behavior with the aim of improving socially important behaviors to a meaningful degree and demonstrating that the intervention measures used are responsible for the improvement in behavior (Al-Khatib, 2017).

Applied behavior analysis is defined as procedural: It is the set of goals and training methods included in the training program, based on applied behavior analysis, on which children with autism spectrum disorders are trained to provide them with self-care skills.

People with autism spectrum disorders: are those who show clear deficits in communication skills, social interaction, stereotyped, repetitive and ritual behaviors (APA, 2013.p49).

Autism spectrum disorders are defined procedurally:

They are children with autism who are enrolled in institutions and centers of special education in Jordan, have been diagnosed by the specialized official centers, and have undergone the training program prepared for the purposes of the current study in the centers they are enrolled in.

Modulation: is the teaching of new behaviors using differential reinforcement of responses that gradually approach the final target behavior with the aim of forming behaviors that do not currently exist (Al-Khatib, 2017, p.155).

Procedural formation is defined as a set of activities, exercises and practices aimed at developing self-care skills for children with autism spectrum disorder.

Indoctrination: is the temporary use of additional discriminatory stimuli in order to increase the likelihood of performing the behavior by urging the individual to behave in a certain way, and hinting at him that it will reinforce that behavior (Al-Khatib, 2014, p. 216).

Indoctrination is defined as procedural: It is the set of aids and tips used for verbal, physical or gestural assistance in activities, exercises and practices aimed at developing self-care skills for children with autism spectrum disorder.

The limits of the study:

Time limits: The current study was limited to the year (2020/2021).

Spatial boundaries: This study was limited to Irbid, Jordan.

Human limits: Children of autism spectrum disorders in Irbid.

Objective limits: Building a program based on the techniques of applied behavior analysis, and measuring its effectiveness in modifying the behaviors of children with autism spectrum disorder.

Previous studies:

Lack of self-care skills, and problems associated with unwanted behavior such as: dressing, eating, using the bathroom, brushing teeth ... etc., are among the problems that children with autism spectrum disorder suffer. Studies have indicated the effectiveness of applied behavior analysis in building a wide range of important skills and reducing behavioral problems in children with autism spectrum disorder, enabling them to live independently across multiple environments, and enhance opportunities for self-learning.

Al-Hamid (2019) conducted a study in Egypt aimed at preparing a training program to impart some independence skills among autistic children and to reveal the effectiveness of the proposed program in developing independence skills. The results of the study showed an improvement in the performance of the experimental group in the post performance. It is inferred from the results of comparing the averages and standard deviations of the group's performance in the pre and post application. The results also showed that there are statistically significant differences between the mean scores of the children of the experimental and control groups in the post-measurement on the scale of independence skills of the children of the experimental group. And there are statistically significant differences between the mean scores of the experimental group children in the pre and post measurement on the scale of independence skills in favor of the post measurement.

Junaid conducted a study (2018) aimed at the effectiveness of a program based on the use of applied behavior analysis to increase attention in a sample of autistic children. To achieve the objectives of the study, the researcher used the experimental method to suit the circumstances and objectives of the study. The sample of the study consisted of (12) children of the autism spectrum, whose ages ranged from (8-12) years, and they were randomly divided into two experimental and control groups. The results showed statistically significant differences in the experimental group in the multiple measures (pre, post and tracer) in attention in favor of the post-measurement, in addition to the presence of a significant effect of the proposed program in increasing the attention skill of children on the autism spectrum through the tracer measurement, and the results also showed the existence of related differences Statistical significance between the experimental and control group in attention dimensional measurement in favor of the experimental group.

The study of Al-Beri (2017) in Jordan aimed to measure the effectiveness of a training program based on behavior modification for female students with autism spectrum disorders in reducing behavioral problems and developing social behaviors among their students. The sample of the study consisted of all the center's teachers, who numbered (12) teachers, and (45) students from children with autism at the Awj Center, where a sample of (24) children aged between (6-10) years were selected, and they were distributed into two groups: the group The experimental group consisted of (12) children by two children per teacher, and the control group and consisted of (12) children by two children per teacher, and to achieve the goal of the study, the researcher built two measures. The behavioral problems scale and the social behavior scale in addition to the training program. The results of the study showed that there are statistically significant differences in reducing unwanted behavioral problems and developing social behaviors in favor of the experimental group.

Kurkcuglu (2015) conducted a study aimed at comparing the effectiveness of indoctrination types and video modeling for teaching play skills to children with autism spectrum disorder, where the study used three children (two boys and one girl) of (5-6) years old who participated in the study. The results of the study indicated It indicated that there were no statistically significant differences in the education of children with autism spectrum disorders through types of indoctrination and video modeling except in some dimensions.

Domir & Wolfe, (2014) conducted a study aimed at investigating the effect of video instruction in teaching daily life skills for children with autism spectrum disorder, as basic video instruction is a common treatment in classrooms. Previous research has focused mainly on initiation and video modeling techniques that require students to watch The breakdown task details in video before attempting to finish the task independently. The results of the study showed that video instruction was a successful therapist in teaching multiple skills, especially self-care skills, and that children with autism spectrum disorders had the ability to generalize and city on the acquired skills, and video instruction showed more effectiveness than teaching still images and modeling skills techniques using independent correct response ratios.

The study (Mechling, Ayres, Foster, & Bryant, 2013) in the United States of America aimed to investigate the effect of using indoctrination and video formation methods on improving self-care, cooking, and home care skills for students with autism spectrum disorders in the primary stage. The study sample consisted of (4) students with autism spectrum disorders, who were randomly selected. The sample members were observed before and after participating in the training program, where the strategies of initiation and video formation were presented to shape the students' targeted behaviors. The results showed a positive effect of the use of indoctrination and videoframing in improving self-care, cooking and home care skills of students with autism spectrum disorder.

As for the study of Qawasma and Awwad (2012), it aimed to identify the effect of the "SPECTRA" early intervention program on developing daily life skills among a sample of autistic children in Jordan. The sample consisted of (20) children, who were intentionally chosen from special education centers in the Irbid region, and their ages ranged between (4-6) years. The sample members were divided randomly into two control groups, numbering (10) children, and an experimental group of (10) children. A measure of daily life skills for autistic children, included in the early intervention program "SPECTRA", was applied to the sample members. In the experimental and control groups, on the scale of daily living skills, they are attributed to the training program and in favor of the children of the experimental group, and there were no statistically significant differences at the level of ($\alpha = 0.05$) between the average ranks of the scores of autistic children in the experimental group on the daily life skills scale between the two post and follow-up applications due to the program Training.

The study conducted by Nichols (2011) in the United States of America aimed to improve the quality of social and daily life interactions in children with autism spectrum disorders by using a training program based on natural behaviors, and a set of training mechanisms were used, such as play activities, indoctrination, behavior formation and providing natural reinforcers. The results of the study showed the effectiveness of the training program based on presenting a set of natural behaviors and working to shape the target behavior using indoctrination, and that the effect of the program is generalized in multiple interactive contexts.

He conducted a study (Cuvo, Reagan, Ackerlund, Huckfeldt, & Kelly, 2010) in the United States of America that aimed to train students of autism spectrum disorders to follow instructions. A pre-test was used to measure students' level of adherence prior to participation. Then he used a training program based on the use of assessing preferences, indoctrination, avoiding negative stimuli, shaping behavior, extinguishing the behavior and differential reinforcers for different behaviors. The results of the study showed the effectiveness of the training procedure used, and the city on its gains, and that the effect of this type of training is able to transmit in different environments through generalization procedures.

)Leaf, Sheldon, & Sherman, 2010) conducted a study in the United States of America that aimed to identify the effect of using a training program based on behavioral formation in improving the level of students' acquisition of language skills with autism spectrum disorders. The study used a critical descriptive methodology based on a review of psychological and educational databases that publish peer-reviewed scientific papers that investigated the use of this type of training program. The results indicated that most studies agree that training students with autism spectrum disorders by using behavior-shaping strategies are effective in achieving the targeted behaviors.

Newman, Reinecke & Ramos (2009) conducted a study in America that aimed to evaluate the effectiveness of a language training program aimed at enhancing verbal attempts using diacritics, which is a researcher-directed response or any correct answer provided by the respondent and compared it with a training procedure that emphasizes shaping behavior and based on reinforcing Sequential approaches to targeted pronunciation. The sample of the study consisted of (3) children with autism spectrum disorders who were intentionally chosen. The results of the study showed that students mastered verbal skills faster when they were trained using the formulation method compared to students who were trained using verbal attempts.

Fisher (Kodak, & Moore, 2007) conducted a study aimed at using a set of verbal and physical indoctrination strategies and their impact on improving the outcomes of targeted training programs for positive behaviors. The sample of the study consisted of two children with autism spectrum disorder, who were chosen on purpose. To achieve the aims of the study, it used pre- and post-observation, and a

training program consisting of twenty training sessions that used gradual levels of indoctrination. The results showed a positive effect of the program based on gradual indoctrination in improving spoken language skills, and distinguishing the relationships between word and picture in individuals with autism spectrum disorder.

Hume & Odom (2007) conducted a study in the United States of America aimed at investigating the effect of using methods of indoctrination and shaping behavior on improving daily living and play skills among students of autism spectrum disorder. The study used the case study methodology, as (5) cases of autism spectrum disorder students were intentionally selected in a number of special education centers. To achieve the aim of the study, direct observation and a note card were used before and after participating in the program. The results revealed that all participating students showed an increase in daily life skills behaviors, playing skill and in the variety of materials used in them.

Comments on previous studies:

It has been evident through a review of previous studies the importance of training in self-care skills in reducing unwanted behaviors in children with autism spectrum disorders through applied behavior analysis procedures such as: dressing (wearing a shirt), dressing (putting on pants), dressing (Shirt off), undress (take off pants), eat with a spoon, drink with a cup, personal hygiene (wash hands), personal hygiene (brushing teeth), personal hygiene (combing hair), use of the bathroom. By using the strategies of formation and indoctrination in reducing unwanted behaviors and developing self-care skills in autism spectrum disorders, these independence skills are essential in building social relationships with others and developing communication and communication with others. The results of previous studies showed a positive and statistically significant effect of using training programs based on indoctrination and behavior formation in achieving desired behavioral goals.

II. METHOD AND PROCEDURES:

Study population

The study population includes children with autism spectrum disorders who are registered with institutions and centers of special education in the city of Irbid, and their number is (90) students, according to the statistics of the Irbid City Development Directorate for the year (2020-2021).

The study sample:

The study sample included children with autism spectrum disorders present in special education centers in the city of Irbid, and those diagnosed with autism spectrum disorder from the diagnostic centers approved by the Supreme Council for the Affairs of Persons with Disabilities, and the researcher selected a simple random sample consisting of (36) children with Autism spectrum disorders for the age group (4-6) years, and the study sample individuals were randomly distributed into three main groups, where the experimental group (formation) was divided into two divisions in each division (6) children and the experimental group (indoctrination) into two divisions in each division (6) Children and the control group into two divisions in each division (6) children. And Table No. (1) illustrates that.

Group	Age group 4-6 years	Gender	The Center
Modulation	Males	12	Al-Beqai Center for Special Education
Indoctrination	Males	12	Aluj Center for Autism and Special Education
Control	Males	12	Al-Sabah Center for Special Education
Total students	-	36	

Study tool:

Self-Care Skills Scale:

The researcher designed a scale of self-care skills for children with autism spectrum disorder, by referring to the literature and the theoretical frameworks related to the skills of self-care in question, and from these studies: The study of: (Al-Hamid, (2019, (Al-Beri, 2017)), (Kurkcuoglu, 2015), (Domir, wolfe, 2014), (Qawasma, 2012), 2009 (Newman, Reinecke & Ramos), (Mechling, Ayres, Foster, & Bryant, 2013). The behavior of self-care skills of the study sample was judged. According to the triple ranking, as follows: Good degree, weak degree, cannot, and the scale consists of (69) items distributed into ten dimensions, namely: dressing (wearing a shirt), dressing (wearing pants), taking off clothes (taking off the shirt) Dressing (undressing the pants), eating with a spoon, drinking with a cup, personal hygiene (washing hands), personal hygiene (brushing teeth), personal hygiene (combing hair),(using the bathroom)

Validate scale:

First: The validity of the arbitrators: The scale was presented to (8) arbitrators specializing in the fields of autism, special education and psychology. They expressed their views on the relevance and appropriateness of the scale paragraphs, the extent to which the paragraphs relate to each dimension of the scale to which they belong, and the clarity of the linguistic wording. As some paragraphs were excluded and some were amended, in which the percentage of arbitrators' agreement exceeded (87%) or more, so that the number of paragraphs of the scale in its final form was (64) paragraphs.

Second: Building Validity: Pearson correlation coefficients were calculated between the tool areas and Pearson correlation coefficients were calculated between each tool area and with the tool as a whole. It is noted from Table No. (2) that all Pearson correlation coefficients between the tool domains are positive and statistically function, and that all Pearson correlation coefficients between each tool field and the tool field as a whole are positive and statistically significant. The researcher also calculated the Corrected Item-Total Correlation coefficients for the correlation of each paragraph of the tool with the domain to which it belongs, and for the tool as a whole. Table (2) shows that.

Table No. (2): Corrected Item-Total Correlation coefficients to correlate each paragraph of the tool with the domain to which it belongs, and with the tool as a whole

Item No.	Corrected correlation coefficient of item With		Item No.	Corrected correlation coefficient item with	
	The domain	The tool		The domain	The tool
1	.77	.45	33	.74	.62
2	.85	.55	34	.81	.45
3	.87	.64	35	.82	.65
4	.64	.51	36	.65	.60
5	.51	.47	37	.61	.51
6	.57	.51	38	.78	.60
7	.51	.51	39	.75	.69
8	.79	.69	40	.85	.69
9	.78	.75	41	.85	.79

Item No.	Corrected correlation coefficient of item With		Item No.	Corrected correlation coefficient item with	
	The domain	The tool		The domain	The tool
10	.64	.54	42	.84	.69
11	.68	.65	43	.78	.76
12	.65	.55	44	.42	.51
13	.58	.54	45	.83	.69
14	.89	.79	46	.79	.50
15	.85	.82	47	.82	.62
16	.64	.70	48	.86	.47
17	.42	.41	49	.79	.59
18	.52	.43	50	.68	.72
19	.73	.69	51	.48	.40
20	.71	.73	52	.66	.54
21	.74	.77	53	.76	.61
22	.77	.69	54	.77	.65
23	.59	.52	55	.61	.62
24	.75	.68	56	.79	.58
25	.86	.70	57	.57	.30
26	.86	.64	58	.88	.67
27	.85	.68	59	.84	.75
28	.87	.78	60	.68	.42
29	.82	.71	61	.73	.45
30	.70	.71	62	.80	.68
31	.62	.63	63	.89	.81
32	.68	.53	64	.82	.76

It is preferred that its value is not less than (0.30)

It is noted from Table No. (2) that all correlation coefficients are greater than (0.30) and are acceptable for the purposes of this study.

Stability of scale:

The researcher applied the tool and re-applied it after an interval of three weeks on a sample from outside the study sample consisting of (30) autistic children, as Pearson correlation coefficients (repeatability coefficients) were calculated for each area of the tool and the results of the application and for the tool as a whole. The stability of the internal consistency (Cronbach Alpha) for each of the areas of the tool and the tool as a whole, and Table No. (3) shows that.

Table No. (3): Repetition stability coefficients (Pearson) and internal consistency stability coefficients (Cronbach Alpha) for each instrument area and for the instrument as a whole

No.	Domain	Coefficients of stability of internal consistency (Cronbach alpha)	Repetition constancy coefficients (Pearson)
1	Put on a shirt	0.86	0.83
2	Wearing pants	0.86	0.76
3	Take off the shirt	0.88	0.84
4	Take off your pants	0.83	0.78
5	Eat with a spoon	0.94	0.78
6	Drink a cup	0.89	0.65
7	cleaning hands	0.93	0.93
8	Cleaning teeth	0.91	0.90
9	Combing Hair	0.86	0.90
10	Using the bathroom	0.94	0.79
	The tool as a whole	0.97	0.95

It is noted from Table No. (3) that the stability coefficients of repetition (Pearson) ranged between (0.65) and (0.93), and for the tool as a whole (0.95), which is acceptable for the purposes of this study. And that the internal consistency coefficients (Cronbach Alpha) ranged between (0.83) and (0.94), and for the tool as a whole (0.97), which is acceptable for the purposes of this study.

The contents of the training program: The program contains a set of procedures, as follows:

The idea of the program: The idea of the training program is based on developing and developing self-care skills for children with autism spectrum disorder, modifying their behaviors with the help of applied behavior analysis procedures, and making use of the strategies used in it by reviewing the literature related to training to impart self-care skills, and one of the most important studies is to study each of : (Al-Hamid, 2019), (Junaid, 2018), (Al-Beri, 2017), (Domir & Wolfe, 2014), (Al-Khasawneh and Al-Sharman, 2013), (Al-Qawasma and Awad, 2012), (Ingvarsson & Hollobaugh, 2011).

The researcher also relied on building the program on his observations and follow-up of children with autism spectrum disorders in special education centers in the city of Irbid. Through his supervision and training experiences on new teacher preparation programs, field training programs for university students, and codification of the behaviors that need to be modified using applied behavior analysis procedures.

Training program:

The researcher designed a training program to impart self-care skills based on the strategies of formation and indoctrination as follows:

- Formation and indoctrination strategies: The researcher used the formation and indoctrination strategies to teach and develop self-care skills for autism spectrum disorder. The two training strategies consist of (forty) training hours; (Twenty) hours for the formation strategy, and (twenty) hours for the indoctrination strategy, every week (four) training hours divided into two hours for the formation strategy, and two hours for the indoctrination strategy for each session, and each training session ranges from (40) minutes as needed, and was applied individually and collectively. By special education teachers.
- The two training strategies were validated: the researcher presented the proposed training program developed by the researcher to specialists in the field of autism spectrum disorders and special education. Where they expressed their views on the appropriateness of the program, the methods and activities it contains, the extent of their relevance to the proposed therapeutic areas, as well as the adequacy of activities and behaviors aimed at imparting self-care skills for children with autism spectrum disorder. The experts' suggestions were taken into consideration, finalized and implemented.
- Pre-session procedures: represented by preparation and introduction: it takes place at the beginning of the training session that lasts (5) minutes, which mainly focuses on choosing the right time for the session, preparing the training venue with the students and sitting with them on the training table, and identifying the appropriate tools, materials and means.
- The actual procedures of the sessions: which take about (25) minutes from the time of the training session, and are represented in the procedures for obtaining the child's attention, and starting to implement the training session through the proposed strategies to impart the skills of self-care targeted to the child.
- Final procedures of the session: It lasts (10) minutes from the training session, and aims to assess the child's possession of the target skill, through evaluation activities in which the teacher asks the child to implement it at the end of the training session and provide them with feedback.

General objective of the program.

The program aims to impart self-care skills for children with autism spectrum disorders through training program sessions based on applied behavior analysis procedures.

Sub-program objectives:

- To acquire and improve the skill of dressing (putting on and taking off the shirt, wearing and taking off pants) for children with autism spectrum disorder.
- Providing and improving the skills of eating with a spoon and drinking with a cup in children with autism spectrum disorders to get used to eating independently.
- Providing and improving personal hygiene skills for children with autism spectrum disorders in order to achieve the child's health safety and acceptance of those around him, and this dimension is classified into the following paragraphs: A- Hand washing. B- Teeth cleaning. C- Comb the hair. D- Use of the bathroom.

Study procedures:

- 1- Selection of the final study sample, which consisted of (36) children with autism spectrum disorders and the age group between (4-6) years old, in the Al-Awj Center for Autism and Mental Disability, the Beqaa Center for Special Education, and Al-Sabah Center for Special Education in the city of Irbid.
- 2- Developing a measure of gaining self-help skills for children with autism spectrum disorder. The validity and reliability of the scale was verified and passed through the various preparation stages until it reached the final picture.

3- Conducting equivalence procedures for study groups (experimental (formation), experimental (indoctrination), (control) before starting the application procedures. Each group contained (12) children with autism spectrum disorders and each group was divided into two parts in each section (6) Children, where the first experimental group (formation) was in the Beqai Center for Special Education, the second experimental group (indoctrination) at the Al-Awj Center for Autism and Special Education, and the control group at Al-Sabah Center for Special Education, commensurate with the purposes of the study.

4- The program was presented in its final form to the teachers in the three special education centers, which included the two experimental groups in this study.

5- Meeting with teachers of centers for children with autism spectrum disorders in the city of Irbid. The purpose of the program and the theoretical basis on which the researcher proceeded in their development of the program was discussed. The program's objectives, sessions and duration of implementation were also discussed.

6- Clarifying the mechanism by which the training sessions will be implemented by presenting two training sessions for formation and indoctrination, then asking teachers to implement a trial session to provide feedback to them.

- Initiate training for students on training sessions by teachers. 7

8- The researcher attended some training sessions for each skill; For the purposes of noting. progress and providing feedback

9- After the completion of the program implementation period, the dimensional measures. were applied in the special education centers

Study variables:

1- The independent variable: (formation strategy, indoctrination strategy).

2- The dependent variable: self-care skills.

Design of the current study:

The current study is considered a quasi-experimental study, as it aims to develop a training program to impart self-care skills. The pre and post measurement was conducted through the use of the study tool represented by the Self-Care Skills Scale, and the two experimental groups were subjected to treatment (formation strategy and indoctrination strategy), and differences in The performance of the (experimental (1), experimental (2) and (control) groups on the pre and post tests to verify that there is an effect of the training strategy in imparting self-care skills on the performance of the two experimental groups. The study design appears as follows:

Pre Groups prog post

O ex G1 X O

O ex G2 X O

O co G3 O

Strategies of formation and indoctrination

In order to answer the study questions, the researcher extracted the arithmetic averages and standard deviations for the pre and post measurements on the Self-Care Skills Scale for the three groups (the group that was trained using the formation strategy, the group that was trained using the indoctrination strategy, and the control group) for the overall degree and for the sub-domains that consist Including the scale, and the accompanying single analysis of variance (ANCOVA), and the LSD test for dimensional comparisons were used to judge the significance of differences in the total score between the three groups, and the dependent multivariate single-variable analysis of variance (MANCOVA) was used to

judge the significance of the differences between the two groups in the sub-domains That makes up the Self-Care Skills Scale

III. RESULTS:

The results of the first question: Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in the development of self-care skills in the post and pre-measurements between the control group and the experimental group due to the effect of using the teaching strategy (indoctrination, control)?

To answer this question, arithmetic averages, standard deviations and modified averages of self-care skills were extracted for a sample of children with autism spectrum disorders according to the teaching strategy, and Table (4) illustrates this.

Table No. (4): Arithmetic averages, standard deviations, and math averages adjusted for self-care skills for a sample of people with autism spectrum disorders according to the teaching strategy variable.

Strategy	Pre-test		Post-test		Average	Standard error
	Average arithmetic	Standard Deviation	Average arithmetic	Standard Deviation		
Experimental	.403	2.55	.505	1.90	2.470	.092
Control	.346	1.87	.392	1.58	1.946	.092
Total	.507	2.21	.472	1.74	2.208	.063

Table No. (4) shows an apparent variation in the arithmetic means, standard deviations, and the modified means of self-care skills for a sample of people with autism spectrum disorders due to the different categories of the teaching strategy variable (indoctrination, control). The table shows that the arithmetic mean of the members of the experimental group (indoctrination strategy) The pre-application reached 1.90 (), with a standard deviation of (.505), while the arithmetic mean of the control group was (1.58) and a standard deviation of (.392). As for the post application of the members of the experimental group (indoctrination strategy), it reached the arithmetic mean) 2.55), while the standard deviation was (.403). As for the control group individuals, the arithmetic mean was (1.87) and the standard deviation was (.346). To demonstrate the significance of the statistical differences between the arithmetic averages, the accompanying one-way analysis of variance was used. Table (5) illustrates that.

Table (5) Results of the analysis of variance associated with the effect of teaching strategy on self-care skills of a sample of people with autism spectrum disorder

The source of the contrast	Sum of squares	Degrees of freedom	Average of squares	Statistical value	Statistical significance
Pre-test	1.085	1	1.085	11.327	.003
Strategy	1.446	1	1.446	15.098	.001
Error	2.012	21	.096		
Total	5.901	23			

Table (5) shows that there are statistically significant differences at the level of significance ($\alpha = 0.05$) attributed to the strategy, and the differences came in favor of the indoctrination strategy on which the

training program was applied, as the value of (P) was (15.098) with an average of (2.55). With a standard deviation of (.403)?

The second question: Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in the development of self-care skills in the pre and post measurements between the control group and the experimental group due to the effect of using the teaching strategy (formation, control)?

To answer this question, arithmetic averages, standard deviations and modified averages of the self-care skills of a sample of people with autism spectrum disorders were extracted according to the teaching strategy (shaping, control), and Table (6) illustrates this.

Table No. (6): Arithmetic averages, standard deviations and modified arithmetic means of self-care skills for a sample of people with autism spectrum disorders, depending on the variable of teaching strategy

Strategy	Pre-test		Post-test		Average	Standard error
	Average arithmetic	Standard Deviation	Average arithmetic	Standard Deviation		
Experimental	1.68	.251	2.20	.216	2.189	.081
Control	1.58	.392	1.87	.346	1.881	.081
Total	1.63	.327	2.04	.331	2.035	.057

Table No. (6) shows an apparent variation in the arithmetic averages, standard deviations, and averages adjusted for self-care skills for a sample of people with autism spectrum disorders due to the different categories of the teaching strategy variable (formation, control), and the table shows that the arithmetic mean of the members of the experimental group (formation strategy) on the application The tribal group reached (1.68), and a standard deviation reached (.251), while the arithmetic mean of the control group reached (1.63), and a standard deviation of (.392). As for the post application of the members of the experimental group (formation strategy), it reached the arithmetic mean (2.20), while the standard deviation was (.216), as for the control group individuals, the arithmetic mean was (2.04), and the standard deviation was (.331), and to demonstrate the significance of the statistical differences between the arithmetic averages, the accompanying one-way analysis of variance was used in the table (7) Explains it.

Table No. (7) Results of the analysis of variance associated with the effect of teaching strategy on self-care skills of a sample of people with autism spectrum disorders

The source of the contrast	Sum of squares	Degrees of freedom	Average of squares	Statistical value	Statistical significance
Pre-test	.193	1	.193	2.476	.131
Strategy	.556	1	.556	7.130	.014
Error	1.637	21	.078		
Total	2.517	23			

Table (7) shows that there are statistically significant differences at the level of significance ($\alpha = 0.05$) due to the strategy, and the differences came in favor of the formation strategy to which the training program was applied. Where the value of (F) was (7.130), with a mean of (2.20). And a standard deviation of (.216).

The third question: Are there statistically significant differences at the significance level $\alpha = 0.05$? What is the effectiveness of the strategies of formation and indoctrination in developing self-care skills?

To answer this question, arithmetic averages, standard deviations and modified averages of the self-care skills of a sample of autism spectrum disorders were extracted according to the teaching strategy (indoctrination, formation, control), and Table No. (8) illustrates this.

Table No. (8): Arithmetic averages, standard deviations and modified arithmetic means of self-care skills for a sample of people with autism spectrum disorders, depending on the teaching strategy variable

Strategy	Pre-test		Post-test		Average	Standard error
	Average arithmetic	Standard Deviation	Average arithmetic	Standard Deviation		
Modulation	1.90	.505	2.55	.403	2.425	.087
Indoctrination	1.68	.251	2.20	.216	2.350	.084
Control	1.58	.392	1.87	.346	1.925	.086
Total	1.72	.409	2.21	.428	2.207	.049

Table No. (8) shows an apparent variation in the arithmetic means, standard deviations, and the modified means of self-care skills for a sample of people with autism spectrum disorders due to the different categories of the teaching strategy variable (indoctrination, shaping, control), and to demonstrate the significance of the statistical differences between the arithmetic averages. The accompanying mono variance and Table (9) illustrate that.

Table No. (9) Results of the analysis of variance associated with the effect of teaching strategy on self-care skills of a sample of people with autism spectrum disorder

The source of the contrast	Sum of squares	Degrees of freedom	Average of squares	Statistical value	Statistical significance
Pre-test	.883	1	.883	10.356	.003
Strategy	1.625	2	.812	9.525	.001
Error	2.729	32	.085		
Total	6.416	35			

Table (9) shows that there are statistically significant differences at the level of significance ($\alpha = 0.05$) attributed to the strategy, and to show the statistically significant marital differences between the modified arithmetic averages, dimensional comparisons were used in the Sheffee method as shown in Table No. (10).

Table No. (10) Dimensional comparisons in a Sheviah method for the effect of teaching strategy on self-care skills of a sample of people with autism spectrum disorder

	Average arithmetic	Indoctrination	Modulation	control
Indoctrination	2.425			

Modulation	2.350	*.255		
Control	1.925	*.550	*.295	

Table No. (10) shows that there are statistically significant differences between ($0.05 = \alpha$) the indoctrination strategy on the one hand and each of the formation and control strategy on the other hand, and the differences came in favor of the indoctrination strategy. Where the arithmetic average reached (2.425), and there were statistically significant differences ($0.05 = \alpha$) between the formation strategy and the control group. The differences came in favor of the formation strategy and the arithmetic average of the formation strategy reached (2.350), while the arithmetic average of the control group was (1.925).

IV. DISCUSSION OF FINDINGS AND RECOMMENDATIONS:

The current study aimed at the effectiveness of a training program based on the two strategies of applied behavior analysis (indoctrination, formation) to acquire and develop self-care skills, using activities of daily life for children with autism spectrum disorder, specifically developing self-care skills. Where the researcher used a structured behavioral training procedure in training on self-care skills, which is one of the effective procedures that scientific research has indicated in teaching and acquiring new skills. As indicated by the current study and previous studies, the effectiveness of these procedures depends on many factors, including: (1) Determining the desired ultimate behavior and defining it, (2) Choosing the entrance behavior that resembles and leads to the final target behavior, (3) Selecting effective reinforcers and reinforcing the entrance behavior Continuous at first and then strengthening it intermittently, (4) Moving from one level of performance to another according to its speed and improving its performance, (5) Reinforcing the target behavior when it occurs continuously in the beginning and then intermittently reinforcing it. The systematic application and following the specific instructions for each procedure according to the accompanying guide for the program, and the teachers specialized in the field of teaching children with autism spectrum disorders owning techniques of applied behavior analysis, appropriate teaching methods, structured training, and giving sufficient time for training. The researcher attributes the improvement in children with autism spectrum disorders acquiring five behaviors due to the extent of special education teachers' commitment to the instructions contained in the program guide, and the accuracy of following the steps for teaching self-care skills. And from another point of view; The time allocated to each strategy was (20) training sessions at a rate of (40) minutes for each session, so the number of sessions and the length of time were also a determining factor for the results and an explanation of the number of behaviors that were acquired by the study sample. By increasing the effectiveness of the shaping and indoctrination procedures through: (a) the use of discriminatory stimuli to facilitate the formation and indoctrination process, (b) the use of verbal and gestural indoctrination procedures, and physical orientation with the formation and indoctrination processes, (c) the use of simulated learning.

Discuss the results of the first question:

The results of the first question:

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in the expression of self-care skills in the pre and post measurements between the control group and the experimental group due to the effect of using the training strategy (indoctrination, control)?

The results of the first question showed that there were statistically significant differences on the scale of unwanted behaviors between members of the control and experimental group at the level of significance ($\alpha = 0.05$). The differences came in favor of the indoctrination strategy to which the training program was applied, as the value of (P) was (15.098), with an arithmetic mean of (2.55). With a standard deviation of (.403). This is due to the effectiveness of the proposed training program, as the program focused on imparting self-care skills using verbal, gestural, and physical orientation procedures where teachers used verbal, manual and physical guidance and pictorial indoctrination such as: drawings, paintings, photographs, videos, and modeling during Training of children, which spread the spirit of familiarity

between teachers and children, making them accept any instruction from teachers. This helped the children respond quickly during training, which contributed to mastering the skill level. Where material and symbolic reinforcement was used with the aim of encouraging children to perform the skill, it raised their spirits and helped them to repeat the desired behavior and assert self-confidence. And that the program focuses on the problem and solving it by identifying the entrance behavior of children to achieve the chances of success and progress through the integration of the procedures on which the training program is based, which had a great impact on the success of the training program. These study results are consistent. With the study (Domir & Wolfe, 2014), which showed that video instruction was a successful therapist in teaching multiple skills, especially self-care skills. And the study of (Kurkcuoglu, 2015), which aimed to compare the effectiveness of types of indoctrination and video modeling for teaching play skills to children with autism spectrum disorder, as the results indicated that there are no differences in teaching children with autism spectrum disorders through types of indoctrination and video modeling except in some dimensions. The study of Qawasma, Awwad (2012) and Al-Hamid (2019), which showed statistically significant differences between the mean ranks of the scores of autistic children in the experimental and control groups on the scale of daily life skills, attributed to the training program and to the benefit of the children of the experimental group. It also agrees with the study (Hume & Odom, 2007), which revealed that the participating students showed an increase in the behaviors of daily life skills and playing skill and in the diversity of skills used in them. In addition, the study (Fisher, Kodak, & Moore, 2007), which showed that the results showed a positive effect of the program based on gradual indoctrination in improving spoken language skills, and distinguishing the relationships between word and image in individuals with autism spectrum disorder.

Discussion of the second question:

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in imparting self-care skills in the pre and post measurements between the control group and the experimental group due to the effect of using the training strategy (formation, control)?

The results of the second question showed:

There are statistically significant differences at the level of significance ($\alpha = 0.05$) attributable to the training strategy, and the differences came in favor of the formation strategy on which the training program was applied. The value of (P) was (7.130), with an average of (2.20) With a standard deviation of (.216), where the results indicated the effectiveness of the formation strategy in improving self-care skills, and the researcher attributes this result to the fact that the formation procedure uses a process of identifying skills related to the targeted behavior and is based on the successive approximation of the correct response. The researcher applied it, achieved this through the important educational applications of shaping in the educational learning process, a "programmed learning system" that organizes the content and presents it in the form of small logically sequential units, and the objectives envisaged in each unit are precisely formulated, and the learner responds repeatedly and provides immediate feedback. Use with children was appropriate and falls within the preferences of each child that had an impact on teaching self-care skills This result is considered one of the expected results due to the exposure of the experimental group to the program and Hajj B. Its effect on the control group, and this result is consistent with most previous studies which concluded that it is possible to improve self-care skills after experimentation. The results of the current study are in agreement with the study of Michling, Ayres, Foster, & Bryant (Mechling, Ayres, Foster, & Bryant, 2013), which showed a positive effect of using video molding and indoctrination in improving cooking and caring skills at home in autism spectrum disorders. The results of the current study are in agreement with the study of Newman, Reinecke & Ramos (2009), whose results showed that students mastered verbal skills faster when trained using the formation strategy compared to students who were trained using verbal indoctrination attempts. The results of the study are also in agreement with the study of Nichols (2011), which showed the effectiveness of the training program based on presenting the set of natural behaviors and shaping the target behavior using indoctrination and that the effect of the program is generalized in multiple interactive contexts. This result is also in line with the study of Lev, Sheldon, & Sherman (2010), whose results showed that most studies agree that training students with autism spectrum disorders using behavior-shaping strategies are effective in achieving targeted behaviors

Discuss the results of the third question:

Question text: Are there statistically significant differences at the level of ($\alpha = 0.05$) between the effectiveness of the formation and indoctrination strategies in imparting self-care skills?

The results of the study indicated that there were statistically significant differences at the level of significance ($\alpha = 0.05$) between the indoctrination strategy on the one hand and each of the formation and control strategy on the other hand, and the differences came in favor of the indoctrination strategy. Where the arithmetic mean (2.425). The researcher attributes this result to the effectiveness of the two strategies in teaching self-care skills, which did not show that there are clear differences that can be identified for one strategy at the expense of the other except in the skill of wearing the shirt, as it was better in favor of the indoctrination strategy. The results of the current study are consistent with the study (Domir & Wolfe, 2014), which indicated that video instruction was a successful therapist in teaching multiple skills skills, especially with self-help skills. It also agrees with the study (Al-Beri, 2017), which showed the results of the study statistically significant differences in reducing unwanted behavioral problems and developing social behaviors in favor of the experimental group. The results of the study are also consistent with the study of both Kurkcuoglu (2015) and Al-Hamid (2019), which indicated that there are no differences in the education of children with autism spectrum disorders through types of indoctrination and video modeling except in some dimensions. This result is in agreement with the study of Lev, Sheldon, & Sherman (2010), which showed that most previous studies showed that training children with autism spectrum disorder using behavior-shaping strategies for them is effective in achieving targeted behaviors. It also agrees with the study of Coffo, Reagan, Eckerland, Hockfeldt and Kelly (Cuvo, Reagan, Ackerlund, Huckfeldt, & Kelly, 2010), which showed the results of the study the effectiveness of the training procedure used based on the use of evaluating preferences, indoctrination, behavior formation, extinguishing behavior, and differential reinforcement, on Its gains and that the effect of this type of training is able to transfer in different settings. The current study also agreed with the study of Michling, Ayres, Foster, & Bryant (Mechling, Ayres, Foster, & Bryant, 2013), which indicated a positive effect of using formation and indoctrination strategies in improving self-care, cooking, and home care skills for students with autism spectrum disorder. The improvement in the level of self-care can be attributed to the following factors: (1) The teaching methods that the program relied on in training these children to practice self-care skills, which was represented in the use of the formation and indoctrination strategies, and thus the procedure was appropriate in teaching these skills through the use of: Method of modeling by video, modeling teacher. Then he practically executes the skill by himself after the teacher has modeled the skill. (2) The use of reinforcers: with the aim of encouraging children to perform the skill, which led to raising their spirits and helping them to repeat the desired behavior and confirming self-confidence to raise the morale of autistic children, and to encourage them to do the tasks assigned to them with focus and attention. (3) Verbal and manual orientation: The researcher used verbal and manual orientation during the training of children, which spread the spirit of familiarity between teachers and children, making them accept any instruction from teachers. (4) Evaluation: where the teachers were keen to evaluate the extent of children's acquisition of the targeted skills by assigning the children to perform the skills on their own after completing the training, and providing immediate feedback, which contributed to the survival and confirmation of the training effect.

Recommendations:

Depending on the findings of the study, the researcher recommends the following:

- 1- Training families of children with autism spectrum disorders in the use of formation and indoctrination strategies.
- 2- Using the strategies of formation and indoctrination to teach skills other than those targeted by the study.
- 3- Applying the training program to female students with autism spectrum disorders in special education centers.

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