

The Effectiveness of a Training Program in Meeting the Cognitive Needs of Families of Children with Intellectual Disability in Amman

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Abstract: The study aimed to spot the foremost critical cognitive needs of familie's children with intellectual disabilities (ID), the extent to which they need these needs, and to assess the efficacy of training program designed to meet their cognitive needs. The researcher built a tool to identify the degree of cognitive needs of these families. The results also indicated that there were statistically significant differences in meeting the cognitive needs of childrden's families with (ID) between the control and experimental groups and in favor of the experimental group that indicates the effectiveness of the training program provided to address their cognitive needs

Keywords: Cognitive needs, families of children with intellectual disabilities, the training program

1. Introduction

A family in which a child with a disability is born is dominated by a state of psychological strain and complexity, especially when their child is diagnosed to have an intellectual disability. Family responses vary between denial and shock, and at that moment, several concerns are raised about their child's needs, the causes and severity of the condition that has afflicted their child, how and where they should be treated. These questions differ from one family to another depending on the family status and its child conditions. Lack of information about the nature of the

disability that afflicted their child and its causes, how to deal with a child with intellectual disabilities, how to modify their behavior, train them, teach them, and rehabilitate them, and the constant thinking about the future of a child with intellectual disability are among the shared concerns of all families that have a child with ID. The mother is the most influential element in the personality of her child since children spend most of their time with their mothers, especially in their childhood.

1.1. Problem Statement

The problem of this study is stemmed from the parents' concerns about the impact of intellectual disability on their children's

development, how to deal with their children at this stage, their need for training in daily life skills, teaching methods, rehabilitation, and health care. As a result of the lack of services provided to families of children with ID in special needs centers, it was necessary to identify and meet the needs of families of children with intellectual disabilities in Amman, and specifically, this study came to answer the following questions:

1. What degree of cognitive needs do the families of children with intellectual disabilities have?
2. Are there statistically significant differences at ($\alpha = 0.05$) between the experimental and control groups in acquiring cognitive needs attributed to the training program?

1.2. Study Objectives

The current study seeks to achieve the following objectives:

1. Identifying the extent to which families of children with intellectual disabilities possess the cognitive needs of their children with intellectual disabilities.
2. Examining the effectiveness of the training program designed to meet the cognitive needs of families of children with intellectual disabilities.

1.3. The significance of the Study

The importance of the current study lies in identifying the most important cognitive needs that concern the families of children with intellectual disabilities and work to meet them through a training program.

1.4. Study Limits

The results of the study are limited to:

- Spatial limits: centers and institutions for persons with intellectual disabilities in Amman.
- Time limits: This study is limited to data that will be collected from centers and institutions for persons with special needs that deal with the category of children with intellectual disabilities during July 2020.

1.5. Study Terms

Cognitive needs: Is a set of information on the cognitive needs of families of children with intellectual disabilities regarding the nature of the intellectual disabilities, their characteristics, and causes, which are intended to help families understand their children's needs, how to cope with them, and to know the effective approaches and techniques for modifying their children inappropriate behavior.

Families of children with intellectual disabilities: They are the families of children diagnosed with intellectual disabilities who are enrolled in special education centers in Amman.

Training program: A series of training sessions and seminars that have been organized to be given to families of children with intellectual disabilities to address their cognitive needs.

2. Literature review

If it is difficult to care for a normal child, then it will be more challenging to care for a child with disabilities. Actually, families of children with disabilities face many different psychological, material, medical, social, and educational challenges [1]. To enable the family of children with intellectual disabilities to play their expected role properly, they must be equipped with an information system that allows them to learn the knowledge and skills required to effectively educate, train, and qualify their children. They also should be provided with adequate and practical support based on their child's condition [2, 3].

2.1. The needs of families of children with intellectual disabilities:

Several studies about families of children with intellectual disabilities indicated the parents' need to obtain knowledge, social, economic, and educational support [4], the most prominent of which are:

1. Cognitive needs: Obtaining information about intellectual disabilities and their children's health conditions [5].
2. The need for continuous medical care: The birth of a child with an intellectual disability requires many specialized and continuous medical services, especially in the early years of the child's life.
3. Educational needs: With age, the importance of medical services is decreasing, while the importance of education services is increasing therefore,

international rights and laws guarantee the rights of children with intellectual disability to education, just as all ordinary children (DSMV, 2013). Hence, the importance of determining which educational institutions provide the best educational services for people with intellectual disabilities arises without ignoring the crucial role that a family plays in supporting the education and training of its children who have intellectual disabilities. Their role is achieved through their acquisition of the knowledge and skills necessary for teaching and training their children which can only be done through informational, material, and social support [6].

4. Social needs: Many studies indicated that when a child is born with an intellectual disability, his family loses control over its internal functions, and thus its social relations are affected, and it becomes more isolated.

5. The need to grasp behavior modification methods.

The interest in training parents of children with disabilities began to use behavior modification methods in 1959, thanks to the study of Elon and Michael, which confirmed that anyone can modify, teach, and train behavior regardless of his educational qualification, through the use of reinforcement, especially with intellectually disabled children.

Families of children with intellectual disabilities have various needs, such as knowledge, social, physical, and

educational needs. And the most critical is the cognitive needs. In a matter of fact, providing cognitive and material support to families of children with special needs positively contributes to the lives of disabled children and their families [1].

Several studies have revealed the positive impact [7, 8] of supporting parents of children who suffer from mental and cognitive problems with the experiences and guiding methods regarding how to deal and adapt to their children's disabilities.

Alramamneh and Al-Makahleh [9] confirmed what has been mentioned previously through the result of the study they conducted in Salt, Jordan, which identified the most important needs of families of children with intellectual disabilities and the effect of the program in meeting the needs of these families in dealing with their children with an autism spectrum disorder. Also, Keith [10] confirmed the ability of parents to improve the social skills of their children who have intellectual disabilities if they are effectively trained within the social skills program. The results of [11] which aimed to identify the viewpoint of the Saudi families about the training skills they need to deal with their children with severe and multiple disabilities, indicated that the descending order of the sub-needs of the dimension of general concepts came as follows: Principles of behavior modification, psychological stress, strategies for dealing with it, and independence skills.

Parents' involvement in continuous education sessions at regular intervals enhance the program's impact[12], and positively reflected on their children. The results of [13] indicated that families of children with severe disabilities need more community services, information, and family and social support. As for support systems, parents indicated that they firstly depend on their children school, their wives, and their extended families. The results also indicated slight differences between families and parents, and it was in favor of families and their need for more information.

Al-Hazmi [14] conducted a study aimed at identifying the cognitive, material and social needs of parents of children with intellectual disabilities. The study sample consisted of (383) parents, where the results indicated that the material needs come first followed by the cognitive needs and social needs. In 2006, a study was conducted in Turkey [15] to identify the difficulties faced by families of intellectually disabled children in daily care skills and psychological and social problems. Where (103) families participated in the study, the results showed that families did not have sufficient knowledge about the condition of their children and that their lives changed after having a disabled child in terms of the social aspect, family relations, and at work.

By reviewing the previous studies, we perceive that some studies addressed the needs of families of children with

disabilities in general and families of children with intellectual disabilities in particular, and tried to identify their general needs and focus more on the cognitive needs, such as the study of [11, 14, 13].

On the other hand, most of the studies addressed the training programs provided to families of children with disabilities which were designed based on the needs of these families. All the results of the studies confirmed the effectiveness of these programs on the families of children with special needs, as they had a positive impact on both parents and children such as the study of [10, 12]. We can also notice that there are no studies that attempted to examine in detail the cognitive needs and to address those needs. As for the current study, it is unique in that it is the first study to assess the degree to which parents of children with intellectual disability have awareness and information of the characteristics of their children, and the impact of the training program provided to meet the cognitive needs of mothers, on a selected sample of families of children with intellectual disabilities, which makes it a new addition in meeting the needs of

families of children with intellectual disabilities.

3. Materials and Methods

3.1. Study methodology

The study adopted a quasi-experimental approach, to identify the effectiveness of a program to meet the cognitive needs of patients of children with intellectual disabilities in Amman.

3.2. Study Population and Sample

All the (92) mothers of students with intellectual disabilities enrolled in special education centers in Amman. The sample of the study consisted of (40) families of children with intellectual disabilities, whose children were diagnosed by the official authorities as suffering from intellectual disability, enrolled in Aya Center, Marka Academy for Special Education, Jordan Academy for Special Education), as they were chosen randomly and distributed into two equal groups, experimental group (20) families, and control group (20) families, as shown in Table (1).

Table 1. The distribution of study individuals

Grou p	Experime ntal	Contro l	Total
N	20	20	40

3.3. Instruments:

The cognitive needs Scale was designed to identify the cognitive needs of families of children with intellectual disabilities after reviewing the theoretical literature and previous studies regarding the cognitive needs of families of children with intellectual disabilities such as the study of [10, 13]. The questionnaire consisted of (60) items distributed in six areas to cover all aspects of the cognitive needs of

families of children with intellectual disabilities.

The construct validity of the instrument was checked by reviewing many previous studies addressing the topic of families of children with disabilities, such as the study of [11, 14, 12]. The questionnaire was also presented to (10) experienced arbitrators to check its relevance. The scale in its final form consisted of (41) items distributed over six dimensions as shown in Table (2).

Table 2. The scale dimensions and the number of its

Items	Dimensions	NO.	Items	Dimensions	NO.
1	Definition and causes.	5	4	Health Services.	8
2	Characteristics and classification.	7	5	Family upbringing.	7
3	Educational services.	9	6	Professional and transitional services.	5
Total					41

Where the criterion for judging the averages is as follows: (1- 1.66 low), (1.67- 2.33) moderate, and (2.34-3.00 high).

The reliability of the instrument was verified by using the test-retest method on a sample from outside the study sample, The correlation coefficient between the two tests was extracted and it reached (0.86) which is considered suitable for this study. The tool reliability was also calculated using Cronbach's alpha. The reliability coefficient

was (0.81), which is also suitable for this study.

The Training Program was designed according to the results of the study. Its validity was obtained through presenting it to a committee of (10) education specialists, and all their recommendations were taken into consideration. The training program included ten training sessions; each session is held for two hours per day

for ten days. The sessions addressed the following areas as shown in Table (3):

Table 3. Sessions of the training program for families of children with intellectual disabilities

Session	Session subject	Method
1	Definition of disability and its causes.	lecture, debate.
2	Growth characteristics of mentally disabled children.	Lecture, discussion, video presentation, handouts.
3	Developing social skills and increasing social interaction.	Lecture, discussion, video presentation, handouts.
4	Development of aspects of daily life skills and independence	Lecture, discussion, video presentation, handouts.
5	Planning for a child's self-determination.	Lecture, discussion, video presentation, handouts.
6	Behavior modification methods.	Lecture, discussion, video presentation,
7	And teaching methods suitable for an intellectually disabled child.	Lecture, discussion, video presentation, handouts.
8	The importance and methods of parent communication with specialists.	The lecture, the debate.
9	The role of play and stories in a child's development.	Lecture, discussion, video presentation.
10	Ways to maintain the health of the child.	Lecture, discussion, video presentation.

3.4. Procedures

The researcher obtained approval from the centers where the program will take place, invitations were sent to the families of children with intellectual disabilities. 76 families responded to this invitation, the researcher then held a meeting to demonstrate the importance of this study and to clarify the cognitive needs and the procedures of the training program. After determining the cognitive needs, (40) families from the family were selected and divided into two groups: control and experimental groups. The program was applied to (20) families of children with intellectual disabilities in Amman. The duration of the application took two weeks, two hours every day. The researcher used a quasi-experimental design to examine the effectiveness of the training program by comparing the results of two groups: experimental and control.

4. Results

4.1. Results of the first question:

“What degree of cognitive needs do the families of children with intellectual disabilities have?”

Descriptive analysis was obtained to address this question as indicated in Table (4).

Table 4. Descriptive analysis measuring the cognitive needs of families of children with ID.

Dimensions	Mean	SD	Degree
Definition and causes.	1.55	.434	low
Characteristics and classification.	1.55	.358	low
Educational services.	1.45	.469	low
Health Services.	1.65	.496	low
Family upbringing.	1.61	.365	low
Professional and transitional services.	1.40	.362	low
Overall mean	1.54	.305	low

Table (4) shows that the overall mean of the scale of the degree to which families of children with intellectual disabilities possess cognitive needs about the characteristics of their children =1.54 with a low degree, while the means of the sub-dimensions of the scale ranged between (1.40 - 1.65) and they all came at a low degree. Health services ranked first with the highest mean=1.65 and with a low degree, while family upbringing ranked last with the lowest mean= 1.40 and with a low degree.

4.2. Results of the second question:

Descriptive analysis was used to answer the research question “Are there statistically significant differences at ($\alpha = 0.05$) between the experimental and control groups in acquiring cognitive needs attributed to the training program?” The post-measurement of the scale and its sub-dimensions and the modified means between the experimental and control groups were also extracted, as shown in Table (5).

Table 5. A descriptive analysis on the post-measurement of the scale and its sub- and the modified mean between the experimental and control groups

Dimensions	Groups	NO.	Mean	SD	Modified means	Standard error
Definition and causes	experimental	20	2.81	.210	2.798	.093
	control	20	1.70	.475	1.712	.093

Dimensions	Groups	NO.	Mean	SD	Modified means	Standard error
Characteristics and classification	experimental	20	2.65	.247	2.65	.094
	control	20	1.72	.483	1.722	.094
Educational services	experimental	20	1.31	.230	1.304	.087
	control	20	2.41	.470	2.419	.087
Health Services	experimental	20	2.80	.192	2.8	.087
	control	20	1.75	.483	1.75	.087
Family upbringing	experimental	20	2.86	.143	2.828	.102
	control	20	1.87	.571	1.908	.102
Professional and transitional services	experimental	20	2.71	.364	2.684	.114
	control	20	1.66	.551	1.686	.114

Table (5) shows that there are significant differences in the mean on the post-measurement of the scale and that the means of the control group are higher than the experimental, and this indicates an apparent difference in the degree to which families have knowledge and awareness in cognitive needs on the sub-domains. To check if there is a statistically significant effect of the training program ANCOVA was conducted as shown in Table (6).

Table 6. ANCOVA results between the mean of the experimental and control groups on the post-measurement

Source of variance	dependent variable	SS	df	MS	F value	sig	Effect size
Value of Wilkes (.225) sig = 0.000	Definition-post	8.695	1	8.695	59.396	.000*	.650
	Characteristic-post	6.341	1	6.341	42.756	.000*	.572
	Educational post	9.151	1	9.151	71.551	.000*	.691
	healthy post	8.113	1	8.113	63.645	.000*	.665
	Family post	6.233	1	6.233	35.314	.000*	.525
	Professional post	7.344	1	7.344	33.492	.000*	.511
Definition-pre/covariance (pre-	Definition-post	.096	1	.096	.656	.424	.020
	Characteristic-post	.360	1	.360	2.426	.129	.070

Source of variance	of dependent variable	SS	df	MS	F value	sig	Effect size
measurement)	Educational post	.005	1	.005	.037	.849	.001
	healthy post	.050	1	.050	.395	.534	.012
	Family post	.001	1	.001	.004	.949	.000
	Professional post	.005	1	.005	.022	.884	.001
	Definition-post	.005	1	.005	.033	.857	.001
Characteristics-pre/covariance (pre-measurement	Characteristic-post	.359	1	.359	2.424	.129	.070
	Educational post	.020	1	.020	.160	.692	.005
	healthy post	.103	1	.103	.806	.376	.025
	Family post	.386	1	.386	2.185	.149	.064
	Professional post	.040	1	.040	.180	.674	.006
Educational pre/covariance (pre-measurement	Definition-post	.000	1	.000	.001	.980	.000
	Characteristic-post	.015	1	.015	.103	.750	.003
	Educational post	.229	1	.229	1.788	.191	.053
	healthy post	.119	1	.119	.937	.340	.028
	upbringing post	.001	1	.001	.004	.949	.000
Healthy pre/covariance (pre-measurement	Professional post	.239	1	.239	1.092	.304	.033
	Definition-post	.012	1	.012	.085	.772	.003
	Characteristic-post	.079	1	.079	.536	.469	.016
	Educational post	.200	1	.200	1.565	.220	.047
	healthy post	.006	1	.006	.051	.823	.002
Upbringing-pre/covariance	upbringing post	.166	1	.166	.941	.339	.029
	Professional post	.008	1	.008	.034	.854	.001
	Definition-post	.006	1	.006	.040	.842	.001
	Characteristic-	.010	1	.010	.068	.796	.002

Source variance	of dependent variable	SS	df	MS	F value	sig	Effect size
(pre- measurement	post						
	Educational	.001	1	.001	.009	.926	.000
	post						
	healthy post	.031	1	.031	.242	.626	.008
	upbringing post	.020	1	.020	.116	.736	.004
Professional	post	.012	1	.012	.055	.817	.002
	Definition-post	.041	1	.041	.277	.602	.009
	Characteristic-	.000	1	.000	.000	.992	.000
	post						
	Educational	.092	1	.092	.719	.403	.022
pre/covariance (pre- measurement	post						
	healthy post	.149	1	.149	1.167	.288	.035
	upbringing post	.278	1	.278	1.578	.218	.047
	Professional	.562	1	.562	2.562	.119	.074
	post						
Error	Definition-post	4.685	32	.146			
	Characteristic-	4.746	32	.148			
	post						
	Educational	4.093	32	.128			
	post						
Overall modified	health post	4.079	32	.127			
	upbringing post	5.648	32	.176			
	Professional	7.017	32	.219			
	post						
	Definition-post	17.439	39				
	Characteristic-	14.212	39				
	post						
	Educational	17.302	39				
	post						
	healthy post	16.163	39				
	upbringing post	16.444	39				
	Professional	19.311	39				
	post						

Table (6) shows that there are differences on all dimensions of the scale, where the F value for the dimensions came as follows; the definition =59.396; characteristics = 42.756; education (71,551); the health field =63,645; family upbringing =35,314, and the professional dimension =33,492. all of them are statistically significant attributed to the training program. To find out for which group the differences are attributed, the adjusted mean was extracted on all domains between the experimental and control groups as shown in Table (6). The results of the adjusted means show that all the differences came in favor of the experimental group because the adjusted means are higher than the control group, indicating that the experimental group had more knowledge about the characteristics of their children compared to the control group, which indicates the effectiveness of the training program. To find out the effect size, the Eta square

was extracted to indicate the effect size of the sub-fields, and the effect size for the dimensions (definition and causes, characteristics, educational services, health services, socialization, and professional and transitional services are 0.650, 0.572, 0.691, 0.665 0.525 and 0.511 respectively, and this indicates that 65%, 57.2%, 69.1%, 66.5%, 52.5%, 5.11%, respectively, of the variation in the scores of the experimental group on the fields (definition and causes, characteristics and classification, educational services, health services, social upbringing, and professional and transitional services) for the scale are attributed to the training program. For the overall score of the scale, means and the standard deviations were extracted on the post-measurement of the degree to which families of children with intellectual disabilities possess knowledge of the characteristics of their children and the modified means as shown in the following table

Table 7. Descriptive analysis of the post-measurement and adjusted mean of the total score of the scale

Group	NO.	Mean	SD	Adjusted mean	Standard error
Experimental	20	2.76	.161	2.769	.078
Control	20	1.74	.463	1.736	.078
Total	40	2.25	.619	2.252	.078

Table (7) shows apparent differences in the means and standard deviations on the total score of the scale on the post measurement. To reveal the significance of these differences, ANOVA was conducted, and the results are illustrated in Table (8).

Table 8. ANOVA between the mean scores of the experimental and control groups on the measurement (families of children with intellectual disabilities)

Sources of variance	SS	DF	MS	F value	sig	Effect size
Pre-total	.119	1	.119	.986	.327	.026
Group	10.509	1	10.509	87.344	.000*	.702
Error	4.452	37	.120			
Total	14.964	39				

*Statistically significant at ($\alpha = 0.05$)

Table (8) illustrates that the F value of scale “families of children with mental disabilities knowledge of the characteristics of their children” is (87,344), which is considered a statistically significant value, indicating that there are statistically significant differences in the total degree of the family cognitive needs between the experimental and control groups attributed to the training program. To identify to which group the differences are attributed, the adjusted means mentioned in Table (9) were extracted, and it showed that the differences came in favor of the experimental group with a higher mean than the control group, showing that the experimental group had more knowledge and awareness about the characteristics of their children compared to the control group. This proves the effectiveness of the training program. To detect the effect

size for the total score, the Eta square was extracted, and it= 0.702, and this indicates that (70.2%) of the variance in the experimental group’s scores on the total score of the scale is attributable to the training program.

5. Discussion

By revising the previous Tables and results of the first question, we can realize that the overall mean of the scale “the degree to which families of children with intellectual disabilities possess cognitive needs about the characteristics of their children “ was low, thus, it is evident that the degree of having cognitive needs on the sub-dimensions of the scale has also a low degree. Health services ranked first with the highest mean, but it came with a low degree. On the other hand, the family upbringing dimension ranked last with the lowest mean and with a low degree the same as the health services. This can be attributed to the nature of the services

provided in the special education centers which focus on training the child in various areas of development, and ignore training and counseling the families of children with mental disabilities about their children needs and how to deal with them, noting that intellectual disability is discovered in the early years of the child's life and the child spends most of his time at home, therefore, the focus must be on the families of children, and these results are consistent with the results of [13].

The results of the second question indicate significant differences on all dimensions of the scale between the control group and the experimental group, and it is clear from the discrepancy in scores that are in favor of the experimental group on the fields (definition and causes, characteristics, educational services, health services, family upbringing, and professional and transitional services.) and it is attributed to the training program. The researcher attributed this to the fact that the training programs were comprehensive and provided the families of children with intellectual disabilities with the required needs as when the researcher built it, he focused on the cognitive needs of mothers and scheduled the training program flexibly. Moreover, the training program successfully implemented various methods of displaying information, and they were presented in an interesting, attractive, and sequential manner through a group of training sessions using videos and pictures that are related to cognitive needs that provided clear models for children with

intellectual disabilities. Exchanging experiences between the families during the training sessions, and after the end of each session also had an impact on the results. The researcher allowed open discussion for discussing the given information and for answering any questions related to their children. The results of the current study are consistent with the study of [9, 15].

6. Recommendations

Based on the findings of this study the researcher recommends inviting special needs centers to focus more on the needs of the families of the disabled children because of their great role in providing services to their children and stating that the relationship between the center and the family is complementary. As well as holding specific sessions for teaching the parents of children with disabilities on how to deal with their children's different needs and according to the type of their impairments.

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