

# The Effectiveness of a Training Program to Develop Food Culture for Mothers of Mentally Handicapped Children in Najran

Fadya Rezk Abd elgalil Abdelnaby<sup>1</sup> and Nagafa Rezk Abd Elgleel Abd Elnaby<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Special Education, College of Education Najran University, Najran, KSA

<sup>2</sup>Assistant Professor, Department of Home Economics College of Education - Najran University, KSA

<sup>1</sup>frabdalgilel@nu.edu.sa and <sup>2</sup>nrabdelnaby@nu.edu.sa

## ABSTRACT

Children with mental disabilities, especially those who are able to learn, should be helped to learn and practice some daily life skills on their own, including choosing food in quantity and quality due to the strong relationship between nutrition and mental development. And since the mother bears the greatest burden in caring for and feeding her children, especially those with mental disabilities, therefore she must have a sound food culture and awareness and knowledge of how to plan and implement healthy meals. Therefore, the research aimed to reveal the effectiveness of the training program in developing the nutritional culture of mothers of children with mental disabilities who are able to learn and who are present in schools of education in the Najran region. The training program was applied to (20) mothers of children with mental disabilities who are able to learn and they were divided into two groups (10) as an experimental group and (10) as a control group. A food culture awareness form and a training program for food culture development (prepared by the two researchers) were used.

The results showed: the effectiveness of the training program in the development of food culture among mothers of mentally handicapped children who are able to learn, as well as the continuity of its effectiveness in the post- and follow-up measurements.

**Keywords:** food culture - food habits - food alternatives - nutritional needs - the mentally handicapped who are able to learn.

## INTRODUCTION

Globally, approximately 291 million children and adolescents live with a disability, as evidenced by data from the 2017 Global Burden of Disease Study. (Olusanya, et al, 2020) The percentage of mentally handicapped is 2.5:3% of the world's population, and according to the first qualitative report on disability in the Arab world, which was prepared by the Arab Council for Childhood and Development in 2000, the percentage of mental disability reached 32.2%. In a demographic statistical study on mental disability in the Kingdom of Saudi Arabia conducted in 2003, it was found that its rate was 20.2% (Al-Shahrani and Al-Salami, 2014), and the percentage of those who are able to learn constitutes approximately 80% of the cases, and their

intelligence ranges from (50-70) degrees on the Wechsler scale. And this group appears in most cases as ordinary people (Muhammad, 2015). There is no doubt that these percentages deserve attention and attention.

Taking care of the mentally handicapped, especially those who are able to learn from them, is one of the necessary matters so that they can be benefited from in development and integrated into the fabric of society. They should not be left to face the future with capabilities that do not help them in life. They suffer from some behavioral and social problems such as delayed development of oral language, deficits in memory skills, difficulties in learning social rules, difficulties in problem-solving skills, lack of social adaptation, and delays in the development

of adaptive behaviors such as self-help skills and self-care (Daily et al, 2000) .

Also, the lack of ability to learn on their own compared to normal children of the same chronological age (Al-Rousan, 2010). A study Ballan Michelle (2002) confirmed that the mentally handicapped child needs advanced care, as it is difficult to deal with him as his normal counterpart. A study Barntt, Chrastine (2001) indicated the need to pay attention to helping mentally handicapped children to benefit from their remaining abilities and develop a sense of self. While the study of Basse (2001) recommended the need to pay attention to educating the mentally handicapped child so that basic needs can be satisfied and rely on his available abilities.

Therefore, children with mental disabilities, especially those who are able to learn from them, should be helped with some daily life skills, including choosing food, and choosing the types and quantities that suit them according to each case, without increasing or decreasing. There is a strong relationship between the food that a person eats and the survival of his mind in a good way, through the important nutrients necessary for the brain to continue its biological and organic work (Sabra, 2016). Good nutrition can determine the quality of life of children in the future, and improve their ability to learn. It activates their immune systems, raises their energy levels and all aspects of their daily life during their childhood and into adulthood (Al-Jarwani, Al-Mashreqi, 2010). Many studies have indicated that brain functions can be affected by the nutritional status and the way the child is fed during infancy, as well as mental and behavioral skills and physical activity. It became clear from the study Gordon (2003) that iron deficiency can affect brain cells and nerve cells, leading to brain damage or lack of oxygen. Iodine deficiency leads to serious complications in brain functions in the fetus, which leads to mental disability (Al-Ghazali, 2014).

Therefore, improving child nutrition is of great importance to human development and the realization of human rights, as

stated in the documents of the Second International Conference on Nutrition, the Sustainable Development Goals, the Zero Hunger Challenge, and the United Nations Decade of Action on Nutrition 2016-2025 (unssn, 2017). Despite this, it is estimated that 47 million children under the age of five suffer from wasting (United Nations, 2020). The importance of good nutrition is increasing for mentally handicapped children, as some studies have shown that mentally handicapped suffer from some nutritional problems that hinder the child himself and exhaust his parents (Seydeh et al, 2013). And that children with disabilities are more likely to suffer from underweight and stunting compared to their non-disabled peers. (Jahan, 2019) Children with disabilities are highly vulnerable to malnutrition (Engl, et al 2022). Malnutrition and disability share a unique relationship as each of these problems can trigger or cause each other (UNICEF, 2019).

And that children with Down syndrome have a lack of calcium, which causes weak bones and ease of fracture, and a lack of vitamin C, which leads to slow wound healing, frequent infections and frequent colds, a weak immune system with a feeling of laziness, depression, and loss of appetite (Hils et al. 2005). In addition to that, iron, iodine and vitamin A deficiency, nerve disorders and spasms, epilepsy (vitamin B deficiency), and they also suffer from impaired senses, especially smell and taste, as well as lack of water intake, which causes constipation, pale skin and poor concentration, and they also suffer from disorder while eating and eating. Harmful substances and the difficulty of sucking and swallowing (Al-Jarwani, Al-Hamrawi, 2013). As well as refusing to eat a specific food or more, and suffering from a loss or excessive appetite (Abdullah, 2005). As well as the inability to self-feed or the inability to bite or chew and a decrease in the attention span while eating (Hsiu et al, 2009).

Also, the mentally handicapped eat quickly with difficulty swallowing and refuse to eat some useful foods, and they have a decrease in the reach of vegetables and fruits and an increase in the

consumption of sweets (Kubra ; Senay, 2017). And that 14% of them suffer from thinness, and that girls have a tendency to obesity more than boys, and that 70% suffer from a lack of intake of foods rich in calcium, and 90% do not drink enough water according to their daily needs, and that malnutrition is widespread among them (Nalan, 2013). In addition to other nutritional problems such as food allergies, vomiting intentionally or unintentionally (Lakhan ; Vieira, 2008).

While a study of Sanjay ; Nadgir(2013) indicated that the prevalence of obesity and overweight among children and adolescents with mental disabilities between the ages of (5-15) years. People with mental disabilities are more likely to suffer from obesity compared to normal people (Hsieh ,et al, 2014). Therefore, the study of Salaun, et al (2011) recommended the necessity of adopting a preventive strategy to protect against the dangers of obesity in these children, especially in adulthood. It is also from the contact of one of the researchers with children with mental disabilities, she noticed some of their nutritional problems, such as obesity and thinness, not eating breakfast, the demand for fast food, and an appetite disorder, which indicates a lack of food culture.

Therefore, a person's knowledge of his daily food and what it provides him with the necessary nutrients for the nutritional processes, which enter his body in the form of millions of molecules and interact through endless representative pathways until they become a part of it, can direct his nutritional behavior for the best in a way that guarantees him the maximum possible benefit. Complete, balanced, natural food is the basis for health, growth, and for raising the mental, psychological, social, athletic, emotional, and emotional state of the individual in general, and for people with disabilities in particular (Mitchell, 2003).

Ignorance of the basic principles of nutrition is a major cause of the occurrence of many malnutrition diseases, as malnutrition is not due to a lack of economic resources only, but rather to a

poor food culture (Khaled and Yahya, 2020). The study Chauillac et al (1991) proved that there are no programs in food culture specific and clear in third world countries, so the study recommended the need to work on spreading food culture among individuals; Ikeda, et al (1993) indicates that it is possible to improve the nutritional level For individuals, if they learn the rules of peaceful nutrition, even if they gradually return, hence the importance of food culture.

What increases the importance of developing food awareness in general and food culture in particular is what is imposed by the requirements of rapid economic and social changes. Which was accompanied by some problems related to patterns of food consumption and dietary habits. Hence the role of nutritional education, which contributes to correcting dietary trends and food consumption behavior, as it helps to develop nutritional awareness and individual awareness of their nutritional behaviors, avoiding health problems that children suffer from, and helps to avoid future problems and improve family nutritional practices (Al-Zalaki and Maria, 2005).

Therefore, parents, especially mothers, must have knowledge of foodstuffs, their types, ingredients, and the quantities required of them, the benefits of each type and its necessity for health, and the health harms that result from its increase or deficiency, as well as its food sources, and how to preserve its nutritional value and the alternative for each type. Therefore, the food culture of the family is considered A great pillar of preventive medicine and a basic pillar of health safety. According to the mother's culture, awareness and nutritional experience in managing meals, family members achieve nutritional and healthy balance and form healthy eating habits to preserve the health of children, especially the mentally handicapped.

The child forms his food culture through the influences that surround him and what he practices daily or practices in front of him. If he grows up in an environment that does not have a sound food culture, it will translate into unhealthy eating habits,

which negatively affects his health. (Al-Ghaib, 2019). Numerous researches and studies have confirmed that the mother is the source of the child's nutritional education, so focus should be placed on her in nutritional education programs. The mother's lack of nutritional awareness is one of the factors affecting the nutritional status of her normal and disabled children, but a child with mental disabilities, especially mental ones, needs more attention than the mother. So that he can rely on himself in choosing the appropriate healthy food and so that this child is not exposed to malnutrition diseases.

Um ; Choi (2022) stresses the need for practical interventions and policy implementation to improve satisfaction with the daily lives of people with an intellectual disability. Also, those in charge of their care, especially those who are able to learn from them. Therefore, it is necessary to develop food culture among mothers of children with mental disabilities who are able to learn, to help them acquire knowledge and information related to nutrients, their sources, diseases resulting from them, food alternatives, nutritional needs for their children, as well as correct eating habits through a training program for the development of food culture. they have. So that mothers can learn it and impart it to their children, especially the mentally handicapped and those who are able to learn, which enables them to choose healthy and useful food so that it becomes their daily habit to overcome their nutritional problems.

The current research problem can be formulated in the following main question: What is the effectiveness of training on a training program to develop food culture for mothers of mentally handicapped children in Najran?

### **Research Aims :**

The current study mainly aims to :

- 1 - Designing a training program to develop food culture for mothers of children with mental disabilities.
- 2 - Detecting the extent of the effectiveness of the training program in developing the nutritional culture of mothers of

children with mental disabilities in the post-measurement.

- 3- To reveal the extent of the continuity of the effectiveness of the training program in developing the nutritional culture of mothers of children with mental disabilities after applying the program in follow-up measurement.

### **Study Procedures:**

In this part, it deals with the study procedures, starting with the study curriculum and the society to which it was applied, the study tool and its structure, and the statistical methods by which the validity and reliability of the scale were calculated, and finally comes the statistical methods used in the study, and used to answer the questions of this study.

### **First - Study Methodology:**

The current research relies on the semi-experimental approach as an experiment aimed at identifying the effectiveness of training on a training program (independent variable) to develop food culture (dependent variable) among mothers of mentally handicapped children in Najran region, in addition to using the experimental design with two equal groups (experimental and control) to stand On the impact of the program (post-measurement) on the variables of the study, as well as the use of a one-group design to find out the continuity of the effect of the program after the follow-up period (relay measurement of the experimental group).

### **Secondly- The Study Population:**

The study population is represented by all the mothers of children with mental disabilities who are able to learn and who are present in the integration schools in the Najran region.

### **Third, the Study Sample:**

1. An exploratory sample: It consisted of (30) mothers of mentally handicapped children who are able to learn and who are in the integration schools in Najran region. The scale was applied to them to verify the psychometric efficiency of the food culture questionnaire for mothers of mentally handicapped children whose age ranged between (25-45) years. With an average age of

(35.60) and a standard deviation of (5.68).

2. Final sample: The training program was applied to the final sample of the study, which consisted of (20) mothers of mentally handicapped children who are able to learn and who are in integration schools in the Najran region, between the ages of (25-45) years, with an average age of (34.45) and a standard deviation of (6.43). The sample was randomly divided into.

Equivalence between the members of the experimental and control groups for mothers of mentally handicapped children:

The two researchers were keen on random selection and appointment to ensure the integrity of the scientific methodology, by taking into account the experimental controls by verifying the equivalence of the experimental and control groups before applying the training program, in terms of each of the chronological age, the economic, social and cultural level, and the level of food culture, and to achieve this, the researcher Using the Mann-Whitney test, the results were obtained, and Table (1) shows that two groups (10) as an experimental group and (10) as a control group.

**Table (1):** Significance of differences between the experimental and control groups in each of the chronological age, the economic, socio-cultural level, and the level of food culture

Variables	Group name	n	Rank average	Total ranks	U value	Z value	significance level
chronological age	Experimental	10	11.10	111.00	44	0.454	0.650 nonfunctional
	Control	10	9.90	99.00			
socio-economic level	Experimental	10	11.60	116.00	39	0.832-	0.406 nonfunctional
	Control	10	9.40	94.00			
food culture level	Experimental	10	9.60	96.00	41	0.684-	0.494 nonfunctional
	Control	10	11.40	114.00			

It is clear from Table (1) that all the calculated Z values are not statistically significant, and this is considered equivalence between the two groups in each of the chronological age, the economic, socio-cultural level, and the level of food culture before the experimental procedures.

#### **Fifth: Study Tools:**

- 1- A questionnaire of the nutritional culture of mothers of mentally retarded children who are able to learn and who are in the integration schools in Najran region.

#### **Description of the Questionnaire**

It consists of (101) phrases distributed over five dimensions that reflect the nutritional culture of mothers, and these dimensions, in order, are: sources and functions of nutrients (31) phrases, food-related diseases (26) phrases, food habits

(21) phrases, nutritional needs (12) phrases, Food alternatives (11) phrases,

and the questionnaire is suitable for individual or collective application. Ease and clarity have been taken into account in the formulation of the phrases, and their suitability for mothers. There are three levels to answer each of the phrases (yes, I don't know, no).

#### **Honesty and Constancy**

**Virtual validity:** The questionnaire was presented in its initial form to a group of arbitrators, numbering (11) professors in the field of nutrition, to seek their opinion on the formulation of the phrases and the selection of the best appropriate phrases for measuring food culture. The required modification was made by adding or deleting some phrases and obtaining approval as a viable tool

The validity of the internal consistency of the questionnaire:

The validity of the internal consistency was calculated by using the scores of the (exploratory) rationing sample

Pearson correlation coefficient between the scores of each item and the total score of the scale after deleting the score of the item from the total score of the scale. Table (2) shows this

**Table 2:** Correlation coefficients between the scores of each item and the total score of the study tool n = (30)

Sources and functions of nutrients		Food related diseases		Eating habits		nutritional needs		food alternatives	
Sequenc e	correlation coefficient	Sequ ence	correlation coefficient	Sequ ence	correlation coefficient	Sequ ence	correlation coefficient	Sequ ence	correlation coefficient
1	**0.6227	32	**0.813	58	**0.812	79	**0.777	91	**0.800
2	**0.678	33	0.757**	59	**0.704	80	**0.684	92	**0.824
3	**0.735	34	**0.832	60	**0.818	81	**0.724	93	**0.812
4	0.832**	35	**0.694	61	**0.828	82	*0.443	94	**0.668
5	**0.792	36	**0.739	62	**0.780	83	**0.712	95	**0.657
6	**0.952	37	0.822**	63	**0.800	84	**0.730	96	**0.679
7	**0.872	38	**0.885	64	**0.732	85	**0.744	97	**0.673
8	**0.890	39	**0.907	65	**0.773	86	**0.500	98	** 0.609
9	**0.761	40	**0.874	66	**0.792	87	**0.801	99	**0.835
10	**0.733	41	0.785**	67	**0.784	88	**0.726	100	**0.829
11	**0.797	42	**0.770	68	**0.527	89	**0.668	101	**0.737
12	**0.786	43	**0.894	69	**0.867	90	**0.874		
13	**0.718	44	**0.711	70	**0.893				
14	**0.843	45	**0.863	71	**0.606				
15	**0.735	46	**0.878	72	**0.594				
16	**0.881	47	**0.907	73	**0.881				
17	**0.907	48	**0.843	74	**0.814				
18	**0.771	49	**0.822	75	**0.729				
19	**0.905	50	**0.662	76	**0.725				
20	**0.594	51	**0.637	77	**0.834				
21	**0.825	52	**0.831	78	*0.454				
22	**0.757	53	**0.605						
23	**0.838	54	**0.563						
24	**0.718	55	**0.478						
25	0.826**	56	**0.754						
26	0.876**	57	**0.657						
27	**0.876								
28	**0.814								
29	**0.818								
30	**0.784								
31	0.587**								

\*\* Correlation coefficients at (0.01) level \* Correlation coefficients at (0.05) level.

It is clear from Table (2) that all items of the study tool have positive correlation coefficients, and are statistically significant at (0.01), and this means that the tool has a high degree of validity.

Internal consistency (dimension with overall scale score):

Correlation coefficients were calculated using the Pearson coefficient between the correlation of each dimension with the total score of the food culture questionnaire for mothers of children with mental disabilities who are able to learn and who are in mainstream schools. Table

(3) shows this:

**Table 3:** Correlation coefficient of each dimension with the total score of the questionnaire, the questionnaire of the nutritional culture of mothers of mentally handicapped children

Dimensions	correlation coefficient	significance level
Sources and functions of nutrients	**0.866	0.01
Food related diseases	**0.823	0.01
Eating habits	**0.757	0.01
nutritional needs	**0.868	0.01
food alternatives	**0.603	0.01

\*\* function at the level of significance (0.01)

The stability of the food culture questionnaire for mothers of mentally retarded children who are able to learn and who are in mainstream schools was verified by using Alpha- Cronbach method, half-halves: the results are as shown in the following table 4).

It is clear from Table (3) that the values of the correlation coefficients between the dimension score and the total score are significant at (0.01), which indicates the existence of internal consistency.

The stability of the food culture questionnaire for mothers of mentally handicapped children who are interviewed for learning

**Table 4:** The values of the stability coefficients for the nutritional culture questionnaire of mothers of mentally handicapped children

Dimensions	Alpha-Cronbach	Half segmentation
Sources and functions of nutrients	**0.713	0.580
Food related diseases	**0.832	0.781
Eating habits	**0.756	0.528
nutritional needs	**0.872	0.878
food alternatives	** 0.696	0.656
Total marks	0.938	0.841

- Weak Less (0.5) ♦ Medium between (0.5-0.7) ♦ High Greater (0.7)

It is clear from the previous table (4) that the values of the stability coefficients calculated by Cronbach's alpha method and by the split-half method, which are high stability values, which indicates that the questionnaire has a high degree of stability

## 2- Training Program :

A training program has been prepared for the development of food culture for mothers of mentally handicapped children who are able to learn and who are in integration schools in the Najran region.

Techniques used in the program:

Many techniques were used, such as dialogue and discussion, role-playing, modeling, homework and reinforcement, which are based on psychological theories.

Program objectives can be divided into:

- 1- An indicative goal: the program aims to develop the food culture of the experimental group members
- 2- A preventive goal: by providing the experimental group with some behaviors that enable them to confront wrong practices that help in malnutrition for their children.

### Key Features of the Program:

- 1- The number of sessions in the program: The current program includes (15) sessions, and the program is applied at the rate of (3) sessions per week over a period of time (5) weeks.
- 2- Session time: The time for one session ranges from (45-60) minutes, depending on the topic of the session, the techniques used, and the conditions of the sample.

- 3- The language of the program: The program is presented in an easy language ranging from colloquial to classical, to make it easier for them to understand and benefit from the sessions.
- 4- Stages of implementing the program: It was carried out in five stages: preparation, preparation, initiation, implementation, evaluation, and follow-up.
- 5- Location of the sessions: The program was implemented in the school's activity room.

- 6- The content of the sessions: The content of the counseling sessions was selected based on the general and procedural goals that were identified for the program and the practical procedures, including the techniques and material means used.

#### **Exploratory Study:**

An exploratory study of the program used in the current research was conducted on a number of mothers who meet the same conditions as the experimental sample, and it was identified: the appropriate duration for each session, the appropriate number of sessions to achieve the goal and the techniques used.

**Table No. (5) Content of the training program**

<b>Session type and time</b>	<b>Session Title</b>	<b>Objective of the session</b>	<b>The techniques used</b>	<b>Training activities</b>
session1 (45-60) minutes	-Introduction and acquaintance between researchers and sample members -Introducing the programme -Food concepts	-Achieving familiarity, familiarity, affection and trust between the researchers and the sample members. -Defining the sample members the reason for their presence in the training group -Introducing the program and giving a comprehensive idea about it and the main steps in light of which the training sessions take place - Recognizing some food concepts such as food - nutrition - balanced nutrition - malnutrition - nutritional needs – nutrients	Discussion Presentations reinforcement - Homework	lecture Brainstorming Individual activity
3session session time (45-60) minutes	Sources and functions of nutrients	-Learn about the sources and functions of carbohydrates -Identify the sources and functions of proteins -Distinguish between sources of carbohydrates and proteins -Differentiate between the functions of carbohydrates and proteins -Identify the sources and functions of fats -Identify the sources and functions of vitamins -Distinguish between sources of fats and vitamins -Distinguish between the functions of fats and vitamins -Identify the sources and functions of mineral salts -Multiple sources and functions of water -Compare the major and minor sources of mineral salts -Distinguish between the functions of major and minor mineral salts	Discussion Presentations reinforcement - Homework	-lecture - Brainstorming -Self-education -Workshops -Distinguish between living models
3session session time (45-60)	Food related diseases	- Identify diseases resulting from deficiency or excess of carbohydrates -Identify diseases resulting from deficiency or	Discussion Presentations reinforcement	-lecture - Brainstorming



minutes		<p>excess of proteins</p> <p>-Differentiate between diseases resulting from deficiency or excess of carbohydrates and proteins</p> <p>Identify diseases resulting from deficiency or excess of fats</p> <p>Identify diseases resulting from deficiency or excess of vitamins</p> <p>-Differentiate between diseases resulting from deficiency or excess of fats and vitamins</p> <p>-Identify diseases resulting from deficiency or excess of mineral salts</p> <p>-Identify diseases resulting from lack or excess of water</p> <p>-Differentiate between diseases resulting from deficiency or excess of mineral salts</p>	- Homework	<p>g</p> <p>-Self-education</p> <p>-Workshops</p>
2session session time (45-60) minutes	dietary habits	<p>-Recognizing the correct eating habits-</p> <p>-Identifying wrong eating habit</p> <p>- How to overcome wrong eating habits</p>	<p>-Discussion</p> <p>-Presentations</p> <p>-reinforcement</p> <p>- Homework</p>	<p>-lecture</p> <p>- Brainstorming</p> <p>-Self-education</p> <p>- workshops</p>
2session session time (45-60) minutes	nutritional needs	<p>-Remember the nutritional needs of carbohydrates</p> <p>-Remember the nutritional needs of proteins</p> <p>-Multiple nutritional needs of fats</p> <p>-Explain the nutritional needs of vitamins</p> <p>-Remember the nutritional needs of mineral salts</p> <p>-Explain nutritional needs for water</p> <p>-Compare nutritional needs for nutrients</p>	<p>-Discussion</p> <p>-Presentations</p> <p>-reinforcement</p> <p>- Homework</p>	<p>-lecture</p> <p>- Brainstorming</p> <p>-Self-education</p> <p>- workshops</p>
2session session time (45-60) minutes	food alternatives	<p>-Multiple starch alternative</p> <p>-Remember the group of fruit substitutes</p> <p>-Explain the group of dairy alternatives</p> <p>-Variety of vegetable alternatives</p> <p>-Remember the group of meat substitutes</p> <p>-Describe the group of fat substitutes</p> <p>-Compare calories from each group</p>	<p>-Discussion</p> <p>-Presentations</p> <p>-reinforcement</p> <p>- Homework</p>	<p>-lecture</p> <p>Brainstorming</p> <p>Self-education</p> <p>workshops</p> <p>Live models</p>
1session session time (45-60) minutes	Review and integrative view of the closing program and calendar, a day of fun	<p>-Review what has been accomplished in previous sessions</p> <p>-Remind the respondents of all the technicians, information and skills that they acquired through the program</p> <p>-Standing on the strengths and weaknesses in the extent to which the program achieves its main objective</p> <p>-Review any shortcomings, defects, or any technical or session before ending the program</p> <p>-Preparing the sample members to finish the program</p> <p>-Evaluate program effectiveness</p> <p>-Thanking the respondents, celebrating them, and encouraging them to continue</p>	<p>- Discussion</p> <p>- reinforcement</p>	<p>Lecture-</p> <p>- Brainstorming</p>

		implementing and following up on what they learned through the program sessions		
--	--	---	--	--

**Seventh:** The statistical methods used in the study:

In order to reach the results that achieve the objectives of the study, and analyze the data, a variety of statistical methods were used, by using the Statistical Package for Social Sciences (SPSS), after the data was encoded and entered into the computer, and the statistical methods that Used in this study are:

- 1- To calculate the psychometric characteristics, the correlation coefficient (Pearson), Cronbach's alpha, and half-partition were used using (Spearman's) equation.
- 2- The Mann-Whitney test, the Wilcoxon test, and the binary correlation coefficient of ranks, in order to verify the validity of the study hypotheses.

Second, the results and their discussion:

Results of the first hypothesis: The first hypothesis states, "There are statistically significant differences between the mean ranks of the scores of the experimental group and the control group in the post-measurement on the questionnaire of the nutritional culture of mothers of mentally handicapped children who are in integration schools in Najran region at the level of (0.01) in favor of the experimental group.

In order to verify the validity of this hypothesis, the Mann-Whitney test (U) and the value of Z) were used as one of the non-parametric methods to identify the significance of the differences between the mean ranks of the scores of the two groups, the members of the experimental group and those of the control group in the post-measurement, in order to find out the significance of what might happen to The level of food culture among mothers of mentally handicapped children who are able to learn in the Najran region, as reflected by their scores on the level of nutritional culture among mothers of mentally handicapped children who are able to learn in Najran region, and to calculate the effect size of the program using the binary correlation coefficient of ranks

**Table No. (6):** The values of (U, Z) and their significance for the differences between the mean ranks of the scores of the members of the experimental group and the members of the control group and the effect size of the level of food culture among mothers of children with mental disabilities who are able to learn in Najran region in the post-measurement

Dimensions	Group name	N	M	Total	value (U)	value (z)	Sig.	r prd
Sources and functions of nutrients	Experimental	10	15.50	155.00	0.000	-3.785	0.000	1.000 very big
	Control	10	5.50	55.00				
Food related diseases	Experimental	10	15.50	155.00	0.000	-3.803	0.000	1.000 very big
	Control	10	5.50	55.00				
Eating habits	Experimental	10	15.50	155.00	0.000	-3.792	0.000	1.000 very big
	Control	10	5.50	55.00				
nutritional needs	Experimental	10	15.50	155.00	0.000	-3.803	0.000	1.000 very big
	Control	10	5.50	55.00				
food alternatives	Experimental	10	15.30	153.00	2.000	-3.652	0.000	0.960 very big
	Control	10	5.70	57.00				

Total marks	Experimental	10	15.50	155.00	0.000	-3.782	0.000	1.000 very big
	Control	10	5.50	55.00				

The tabular value of (Z) at the level of significance (0.05) is equal to (1.96).

It is evident from Table (6) the following: It is evident that the Z value calculated in the total score and the sub-dimensions of the food culture level is greater than the marginal value (1.96), which indicates that there are statistically significant differences between the mean ranks of the scores of the two groups, the experimental group and the control group. The level of food culture among the mothers of mentally handicapped children who are able to learn in the Najran region in the post-measurement, and that these differences are significant at (0.01) in favor of the averages of the experimental group.

The value of the binary correlation coefficient of ranks (rprb) ranged from (0.96 to 1), and this indicates that there is a very strong effect of (the training program) on the level of food culture in the experimental group compared to the control group, which indicates the fulfillment of the first hypothesis of the study hypotheses, and the researchers attribute this The result was that the experimental group was exposed to the program and its effect was blocked on the control group, and the use of multiple techniques and methods, and the mothers' interest in knowing nutritional information.

This result agrees with most of the previous studies that concluded that it is possible to increase the development of awareness of ways to rationalize food consumption after experimentation. Also, during the sessions, the researcher relied on the use of multiple techniques such as modeling, analyzing tasks into simple steps, as this contributed to developing

awareness of ways to rationalize food consumption among students of the College of Education at Najran University. This result agreed with the study of (McIntyre ,2008).; ( Al-Ghalban, ; El-Deeb,2013); (Foley, 2016);(Taa Allah.,2018); (Al-Hajri, 2021).

Results of the second hypothesis: The second hypothesis states that "there are statistically significant differences between the mean scores of the experimental study group in the two procedural pre and post measurements at the level of food culture among mothers of mentally handicapped children who are able to learn in Najran at the level of (0.01) in favor of the post measurement

To test the validity of this hypothesis, the Wilcoxon test and the value of Z were used as one of the non-parametric methods to identify the significance of the differences between the mean ranks of the degrees of the experimental group in the level of food culture among mothers of children with mental disabilities who are able to learn and who are present in schools of education in the Najran region in the pre and post procedural standards. In order to calculate the size of the effect of the program, the researcher relied on calculating it in the case of the Wilcoxon test for the two samples linked using the binary correlation coefficient (r (prd)) for ranks.

**Table No. (7):** The significance of the differences between the mean ranks of the scores of the pre and post standards and the effect size of the level of food culture among the mothers of mentally handicapped children who are able to learn in the Najran region of the experimental group region in the post-measurement

Dimensions	Telemetry / tracking	N	M	Total	value (z)	Sig.	r prd
Sources and functions of nutrients	negative ranks	0	0.00	0.00	2.805	0.005	1.000 very big
	Positive ranks	10	5.50	55.00			
	Equality	0					

	Total	10					
Food related diseases	negative ranks	0	0.00	0.00	2.807	0.005	1.000 very big
	Positive ranks	10	5.50	55.00			
	Equality	0					
	Total	10					
Eating habits	negative ranks	0	0.00	0.00	2.807	0.005	1.000 very big
	Positive ranks	10	5.50	55.00			
	Equality	0					
	Total	10					
nutritional needs	negative ranks	0	0.00	0.00	2.807	0.005	1.000 very big
	Positive ranks	10	5.50	55.00			
	Equality	0					
	Total	10					
food alternatives	negative ranks	0	0.00	0.00	2.805	0.005	0.960 very big
	Positive ranks	10	5.70	57.00			
	Equality	0					
	Total	10					
Total marks	negative ranks	0	0.00	0.00	2.803	0.005	1.000 very big
	Positive ranks	10	5.50	55.00			
	Equality	0					
	Total	10					

- The tabular value of (Z) at the level of significance (0.05) is equal to (1.96).

It is clear from Table (7) that the value of Z calculated in the total score and sub-dimensions is greater than the marginal value (1.96), which indicates that there are statistically significant differences between the mean ranks of the bikes in the dimensions of the level of food culture among mothers of children with mental disabilities who are able to learn and who are in schools Education in the Najran region and the total score at (0.01) in the pre and post measurement of the experimental group, and that these differences are in favor of the post measurement averages.

The value of the binary correlation coefficient for the ranks of related pairs (r prb), which is equal to (1.0), indicates that there is a very strong effect of (the training program) in improving the nutritional

culture of mothers of mentally handicapped children who are able to learn in the Najran region, which indicates the achievement of the results of the second hypothesis of the study. The researcher attributes this result to the fact that mothers care about food culture because of its importance to the health of their children at all ages, especially those with mental disabilities, which increased their enthusiasm and attention during the program sessions to learn more about the sources and functions of nutrients, food-related diseases, their children's needs of nutrients, and alternatives. Nutrition, as well as correct eating habits, as well as the possibility of repeating information and skills until the stage of mastery and mastery. The researchers also divided the skills into small steps that require response

and are given immediate feedback, which focuses on the training objective. This result is consistent with the study of (Suleiman, ,2012);( Abu Al-Saud, ,2014);( Al-Atreby, ; Abdel Aal, 2018), (Al-Houri; Bani Nasr,2020);( Saqr,et al, 2022).

### 3- Results of the Third Hypothesis:

The third hypothesis states that "there are no statistically significant differences between the mean scores of the experimental study group in the post and follow-up measurements (one month after the end of the program) at the level of food culture among mothers of mentally retarded children who are able to learn and who are present in schools of education in the Najran region

To test the validity of the hypothesis, the Wilcoxon test and the value of (Z) were

used as one of the non-parametric methods to identify the significance of the differences between the mean ranks of the degrees of the experimental group in the level of food culture among mothers of mentally handicapped children who are able to learn in the Najran region in the post and follow-up measurements. The results were as shown in Table (8)

**Table (8):** Significance of the differences between the mean ranks of the scores of the post and follow-up measurements of the level of food culture among mothers of mentally handicapped children who are able to learn in the Najran region of the experimental

Dimensions	Telemetry / tracking	N	M	Total	value (z)	Sig.
Sources and functions of nutrients	negative ranks	6	6.33	38.00	1.073	0.283
	Positive ranks	4	4.25	17.00		
	Equality	0				
	Total	10				
Food related diseases	negative ranks	6	3.88	15.50	1.241	0.215
	Positive ranks	4	6.58	39.50		
	Equality	0				
	Total	10				
Eating habits	negative ranks	4	4.75	19.00	0.415	0.678
	Positive ranks	5	5.20	26.00		
	Equality	1				
	Total	10				
nutritional needs	negative ranks	5	6.40	32.00	1.133	0.257
	Positive ranks	4	3.25	13.00		
	Equality	1				
	Total	10				
food alternatives	negative ranks	3	5.33	16.00	0.795	0.297
	Positive ranks	6	4.83	29.00		
	Equality	1				
	Total	10				
Total marks	negative ranks	5	5.00	25.00	0.427	0.766

	Positive ranks	4	5.00	20.00		
	Equality	1				
	<b>Total</b>	10				

### ACKNOWLEDGMENTS

The author are thankful to the deanship of scientific research at Najran University for funding this work under Najran Region research program funding program grand code (NU/RG/SEHRC/11/5)

### REFERENCES

- 1- Abdullah, E. S . (2005). Nutrition of healthy age groups - patients - people with special needs. Egypt: Arab Nile Group.
- 2- Abu Al-Saud, S M A. (2014). The effectiveness of a training program in developing some vocational skills among the mentally handicapped and its impact on reducing future anxiety among parents in Taif Governorate. Journal of the Faculty of Education, Port Said University, Egypt, (160 ), 37-112.
- 3- Al-Atreby, R M T & Abdel Aal, A A M. (2018). A training program for special education teachers to develop self-management skills for mentally handicapped children, Culture and Development, 18(17), 89-206.
- 4- Al-Rousan, F. (2010). Introduction to Mental Disability, Fourth Edition, Amman: Dar Al-Fikr.
- 5- Al-Ghaib, H. A. (2019). Kindergarten teachers' practices in providing the kindergarten child with food culture during the meal period. Journal of Educational and Psychological Sciences, Arab Journal of Science and Research Publishing, 3( 4), 74-96. DOI : 10. 26389/AJSRP. H111018
- 6- Al-Ghalban, H A & El-Deeb, H F J . (2013). The effectiveness of a training program based on family counseling for mothers of children with mental disabilities in developing some of their language skills. Zagazig University, College of Education, ( 79), 403-462.

It is clear from Table (8) that the Z value calculated in the total score and the sub-dimensions is less than the threshold value (1.96), which indicates that there are no statistically significant differences between the mean ranks of the scores of the experimental group in the post and follow-up measurements at the level of food culture among mothers of disabled children Those who are mentally able to learn and who are present in schools of education in the Najran region, and this means the continuity of the program and this can be due to the mothers' acquisition of information and its application until it became one of their daily habits that they practice easily Mohamed, et al. (2022); Hassan, et al (2022, which concluded that the training program used was effective.

### RECOMMENDATIONS AND SUGGESTIONS

- 1- Inclusion of food culture in school curricula since kindergarten.
- 2- Availability of a nutrition specialist in institutions for the mentally handicapped to provide them with nutritional education.
- 3- Providing courses in food culture through social media
- 4- Paying attention to spreading food culture among all segments of society.
- 5- Dissemination of correct nutritional information through all media.
- 6- Preparing training programs to develop food culture for mentally handicapped children who are able to learn.
- 7- Paying attention to providing mothers with nutritional information about the sources and functions of nutrients and how to use food alternatives to provide healthy meals.
- 8- Introducing mothers to wrong eating habits that affect the mental health of their children.

- train parents to become sexuality educators for their children with mental retardation: an effectiveness study P.H.D, university of texa.
- 15- Barnett, C.(2001) . In the best Intersect of the child assessing service needs and availability for par teats with mental retardation ,say brook institute, 40.
  - 16- Basse, C. (2001). Working with mentally handicapped ,Cale publishing company ,California.
  - 17- Chauliac, M; Anne M; Masse. R. & Micheune, D.(1991) : "Nutrition Education" INTERNATIONAL CHILDREN'S CENTRE PARIS. eric no : ed 339487
  - 18- Daily, D. K.; Ardinger, H. H & Holmes, G. E. (2000): Identification and evaluation of mental retardation. Am Fam Physician. , 61, 1059 -1067.
  - 19- Eng, M, Binns, P, Trehan .I , Lelijveld.N, Angood .C, McGrath.M, Groce .N& Kerac.M.(2022). Children living with disabilities are neglected in severe malnutrition protocols: a guideline review;107:637–643. doi:10.1136/archdischild-2021-323303
  - 20- Foley, M M M . (2016). The effectiveness of a training program to improve working memory and its impact on the level of some safety skills among children with mental disabilities who are able to learn. PhD thesis, Faculty of Education, Beni Suef University, Egypt.
  - 21- Gordon;N(2003)Iron deficiency and the intellect ,Brain and Development, 25(1):3-8
  - 22- Hassan, M N M ; Abul- Majd, A A A & M , H M A . (2022). The effectiveness of a training program to reduce depression among mothers with mental disabilities. Journal of the Faculty of Education, Kafr El-Sheikh University, (105), 1195-218. <http://search.mandumah.com/Record/128239>
  - 7- Al-Ghazali, M N M. (2014). Nutrition for the Disabled, Egypt :ealam al kutub .
  - 8- Al-Hajri, A A . (2021). The effectiveness of a training program to improve the habits of mind among the mentally handicapped: those who are able to learn: Journal of the Faculty of Education, Kafr El-Sheikh University, ( 103), 148-172. <http://search.mandumah.com/Record/1241788>.
  - 9- Al-Houri, M N & Bani Nasr, A T. (2020). The effectiveness of a training program to develop the awareness of mentally handicapped children who are able to learn about their social and national rights in Jordan. Journal of the Islamic University for Educational and Psychological Studies, 28( 1), 557-572.
  - 10- Al-Jarwani, H. I M & Al-Hamrawi, S A . (2013). Basics of feeding children with special needs. Cairo: New University House.
  - 11- ALJarwani. H & Al-Mushrafi, I. (2010), educational issues in the field of early childhood, first edition, Alexandria: Horus International Foundation for Publishing and Distribution.
  - 12- Al-Shahrani, A S A & Al-Sulami, A R . (2014). Mental disability in children and its social effects on the family of the disabled, a descriptive study on the families of mentally handicapped children registered with the Disabled Children's Association in Jeddah. Egypt, 2 , 4515-45.
  - 13- Al-Zalaki, S M S & Al-Zahrani, M T S. (2005). The effect of the educational level on food preference and awareness of primary school students, Alexandria Journal of Food Science and Technology, Alexandria, 2( 2), 1-18.
  - 14- Ballan, M . S . (2002) . A psycho-educational group intervention to

- <http://www.nutritionj.com/content/7/1/2>.
- 31- McIntyre, L. L. (2008). Parent training for young children with developmental disabilities: Randomized controlled trial. *American Journal on Mental Retardation*, 113(5), 356-368.. <https://doi.org/10.1352/2008.113:356-368>.
  - 32- Mitchell ,M .K .(2003) . Nutrition across life span. 2 nded. W.B. Saunders Company.
  - 33- Mohamed, M M I ;Radi, F M M & Salem, M E M E. (2022). The effectiveness of a training program based on artistic activities in reducing symptoms of attention deficit hyperactivity disorder in children with mild mental disabilities: *Journal of the College of Education, Mansoura University*, 3(118), 1276-1305. DOI: 10.21608/maed.2022.263521
  - 34- Muhammad, M . M . (2015). People with special educational needs, a comprehensive vision for researchers, teachers and parents. Riyadh . Saudi Arabia, Naif University Publishing House.
  - 35- Nalan, H. N. (2013). Nutritional status in mentally disabled children and adolescents: A study from Western Turkey. *Pakistan Journal Medical Science* . 29(2) , 614- 618. [www.pjms.com.pk](http://www.pjms.com.pk).
  - 36- Olusanya BO, Wright SM, Nair MKC, et al .( 2020). Global burden of childhood epilepsy, intellectual disability, and sensory impairments. *Pediatrics*; 146(1). doi:10.1542/peds.2019-2623.
  - 37- Sabrah , g . k . m . A. (2016). A theoretical study of some aspects of intelligence and food from the point of view of evolutionary psychology. *Journal of the Faculty of Education, Al-Azhar University*, 35(168), Part One, 773-. 798 DOI 10.21608/JSREP.2016.31641.
  - 23- Hils, M. S. (2005): *Modern Nutrition in Health and Disease*. Lippincott Williams and Wilkins. 12, 74-94.
  - 24- Hsieh, K; Rimmer, J and Heller, T. (2014). Obesity and associated factors in adults with intellectual disability. *Journal of Intellectual Disability Research*,58(9),851-863.
  - 25- Hsiu, Y.L .; TeHuang, B.Y.; Chun-Chih, C. W & ChiaHua,Y. Y. (2009): Dental caries associated with dietary and toothbrushing habits of 6- to 12-year-old mentally retarded children in Taiwan. *Journal of Dental Sciences* . 4( 2), 61-74.
  - 26- Ikeda ,J; Dugan, S ; Feldman, N ; Mitchell, R . ( 1993) . " Native Americans in California Surveyed on Diets, NUTRITION Needs" ERIC NO : EJ 469449. DOI:10.3733/CA.V047N03P8.
  - 27- Jahan. I , Karim .T, Al Imam M H, Das .M C, Ali K M , Muhit M & Khandaker G. ( 2019). Childhood Disability and Nutrition: Findings from a Population-Based Case Control Study in Rural Bangladesh . *Nutrients* .11(11):2728 . <https://doi.org/10.3390/nu11112728>.
  - 28- Khaled, Z A & Yahya, S H M . (2020). The effectiveness of a computer program in food culture on cognitive achievement and the development of food and health awareness among middle school students. *International Journal of Educational and Psychological Sciences*. 24, (43), 88-122. Retrieved from <http://.search.mandumah.Com/Record/1069984>
  - 29- Kubra , S. A & Senay, I. I. (2017): Dietary patterns and feeding problems of Turkish children with intellectual disabilities and typically developing children. *Journal of Education and Practice*. Vol.8, 442-456.
  - 30- Lakhan, S. E & Vieira, K. F. (2008). Nutritional therapies for mental disorders. *Nutr J*. 7(1)2



- 45- Um, YJ., Choi, YJ. (2022). The effect of employment status on people with a mental disability and on daily life satisfaction: The mediating effect of acceptance of disability. *Curr Psychol* 41, 6267–6274  
<https://doi.org/10.1007/s12144-020-01123-2>.
- 46- Unicef.(2019). The State of the World's Children. Children, food and nutrition: Growing well in a changing world. Newyork: UNICEF. 258.
- United Nations(2020). The sustainable development goals report. Available: <https://unstats.un.org/sdgs/report/2020>.
- 47- Elbyaly, M. Y. H., & Elfeky, A. I. M. (2022). The role of metacognition in promoting deep learning in MOOCs during COVID-19 pandemic. *PeerJ Computer Science*, 8, e945.
- 48- Elbyaly, M. Y. H., & Elfeky, A. I. M. (2022). Investigating the effect of vodcast to enhance the skills of the Canadian smocking and complex problem solving. *Current Psychology*, 41(11), 8010-8020.
- 49- Elbyaly, M. Y. H., & Elfeky, A. I. M. (2023). THE EFFECTIVENESS OF A PROGRAM BASED ON AUGMENTED REALITY ON ENHANCING THE SKILLS OF SOLVING COMPLEX PROBLEMS AMONG STUDENTS OF THE OPTIMAL INVESTMENT DIPLOMA. *Ann. For. Res*, 66(1), 1569-1583.
- 50- Ahmed, E. S. A. H., Alharbi, S. M., & Elfeky, A. I. (2022). Effectiveness Of A Proposed Training Program In Developing Twenty-First Century Skills And Creative Teaching Skills Among Female Student Teachers, Specializing In Early Childhood. *Journal of Positive School Psychology*, 4316-4330.
- 38-. Salaun, L., & Berthouze -Aranda, S. (2011). Obesity in School Children with Intellectual Disabilities in France, *Journal of Applied Research in Intellectual Disabilities*,24.(4),333-340.
- 39- Sanjay, P. & Nadgir, A. (2013). To find the prevalence of obesity and overweight among children having mental retardation in age group 5-15 years in Dharwad urban. *International Journal of Health Sciences and Research*, 3(1), 7- 13
- 40- Saqr, E A M ; Abu Shaqqa, S A I , Hassan, W M A. (2022). The effectiveness of a training program using the sensory room in improving the receptive language of elephants with mild mental disabilities, *Journal of the Faculty of Education, Kafr El-Sheikh University*, ( 105), 69-92.
- 41- Seyedeh, Z. A.; Pakdaman, S. B & Forogh, A. A. (2013). The Effect of Social Skills Training on Aggression of Mild Mentally Retarded Children. *Procedia - Social and Behavioral Sciences*. Vol 84, 1166-1170.
- 42- Suleiman, K R A . (2012). The effectiveness of a training program for mothers in developing some pre-academic skills for their mentally handicapped children in the early intervention stage. *Association of Arab Educators*, ( 24), Part 2, 393-434.
- 43- Taa Allah, H. (2018). A training program for the development of basic skills for children with mental disabilities - a program aimed at parents, Ph.D. dissertation, Faculty of Humanities and Social Sciences, University of Mohamed Kheidar Biskra, Algeria
- 44- The United Nations Standing Committee on Nutrition. (2017). Schools as a system for improving nutrition. A new statement regarding using school as a basis for food and nutrition interventions. [www.Unscn.org](http://www.Unscn.org).

- 51- Elfeky, A. I. M., & Elbyaly, M. Y. H. (2019). Multimedia: Different Processes. Interactive Multimedia-Multimedia Production and Digital Storytelling. doi: 10.5772/intechopen.81987