

The Effect of Educational Program on Caregivers (Knowledge and Practicing) Toward Their Autistic Children

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Abstract: Background: Autism is a developmental disorder that causes severe impairment in the areas of language development, communication, and social interaction. The diagnosis of autism and other pervasive developmental disorders in early childhood has increased drastically in recent years. **Aim :** Evaluate effect of educational program on caregivers (knowledge and practices) toward caring of their autistic children. **Subject and methods :** A quasi-experimental research design was used, The presents study included 100 caregivers and their 100 autistic children aged between 4-12 years, they were recruited from two different settings El – Abasia mental health hospital and social & preventive centre, Cairo University **Tools of study,** socio-demographic data sheet for caregivers and their children. an interviewing questionnaire to assess the caregivers knowledge and an observational checklist for assessing the caregivers practices for their autistic children as basic self – care, fine and gross motor skills social and emotional skills speech and language skills. By Grejory,(2007) **Results:** Caregivers in the present study demonstrated a significant improvement in knowledge and practices that reflect on their children's skills in motor, emotional and language skills, before and after program implementation as regard (35.5±12.1), (46.1 ± 15.0) for knowledge and (30.6+ 16.3), (39.3 ± 11.4) for skills **Conclusions.** The study concluded that, educational program was effective for caregivers to improve their knowledge and practice regarding their autistic children **Recommendation :** Continuous educational program is needed specially for illiteracy caregivers to raise their awareness toward their autistic children regarding knowledge and practice through home visits, mass media should play a significant role to disseminate the needed information about caring for autistic children., nurses should receive adequate training programs, in autistic children care (physically, emotionally and socially). In order to provide comprehensive care for those children and their families.

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1. Introduction

Autism as mentioned by **Kamp-Becker et al.**,⁽¹⁾ is a complex developmental disability that typically appears during the first three years of a child's life. It is the result of a neurological disorder that profoundly affects the functioning of the brain. It is estimated to occur in as many as 1 in 500 individuals. It is 4 times more prevalent in boys than girls. Its prevalence rate now places it as the 3rd most common developmental disability more common than Down Syndrome.

Autism is often referred to as a spectrum disorder, which means that the symptoms of autism can occur in many combinations and may range from mild to severe. Children with autism often look normal, but seem to be withdrawn into their own world.⁽²⁾

Autism is a complex neuron developmental disorder that usually presents in early childhood and that is thought to be influenced by genetic and environmental factors.. Autism is a developmental disorder that causes severe impairments in the areas of language development, communication, and social

interaction. The diagnosis of autism and other pervasive developmental disorders in early childhood has increased drastically in recent years. Consequently, an ever-growing number of families must cope with often unfamiliar and intimidating circumstances

Autism is characterized by delayed and deviant language development, failure to develop the ability to relate to others ritualistic and compulsive behaviors, including stereotyped repetitive motor activity A variety of speech abnormalities have described, such as echolalia and Pronoun reversal. The speech of some autistic children has an abnormalities in intonation, rhythm and pitch⁽³⁾.

Eapen et al.⁽⁴⁾ Indicated that, autistic children and adolescents are children at risk and thus their needs are commensurately great. It has been proven that the quality of life for autistic children can nonetheless be improved through early diagnosis and treatment, combined with subsequent support from appropriate programs and services.

In fact, several researches have shown that families of children with autism experience high levels of stress, more than families with other types of disabilities. This stress can sometimes lead to despair, depression and, in the worst cases, suicidal thoughts. These caregivers need our support. (5). Families who experience high levels of stress in raising a child with a developmental disability may seek and need more social and organizational support to adapt to their situation.

The caregivers of autistic children are vulnerable to psychological distress, families have been burdened by financial concerns, worries about health of autistic children. Coping with uncertain about child's development is another source of stress, also appear to show high degree of depression and chronic fatigue, there is inadequate support from community agencies, insufficient special skills training to the caregivers and family member is a major issue to the problem of who will care for the child if they become disabled and the provision of like,? line care Giving bring with it, many problem like social isolation and loneliness (6).

In contrast to other types of disabilities, parents of children with autism appear to be at greater risk for depression, anxiety, social isolation, fatigue and frustration in obtaining accurate diagnoses and services. Indeed (1,2) found autism to contribute more to family stress. Individuals with autism frequently engage in behaviours that are potentially disruptive to family life such as aggression, self-injury, impulsivity, hyperactivity, temper tantrums and obsession ritualistic behavior.

Prior research has suggested that when parents and caregivers are actively involved in children's programming and training, the prognosis is better for both parent and children. However, not all families display the characteristics that allow them to take an active role. Parents and caregivers of autistic children also have widely different opinions and beliefs that contribute to their perspective on the critical issues impacting their level of involvement in children's education and training.(7)

A family caregivers concern that has been reported in the literature is the need for information about the dimension of care to be provided. Such information and assistance regarding the disease, physical and psychological care, what symptoms to expect, their causes, and how to manage them, treatment regimens and expectation of future care. Therefore, nurses have a great role in helping children and their family to attain better quality of life, and help them to adjust psychologically and physically, in order to lead a life that is richer, happier & more meaningful⁽⁸⁾

Community psychiatric mental health nurse play an important role regarding to the child and their

families condition, identifying their problems and establish the goal to facilitate the nursing intervention to be carried out to move towards conditional acceptance. provide, preventive, curative and rehabilitative care to individuals, families and group within the community through systematic assessment and planned screening programs⁽⁹⁾.

A similar study done by **Rannan & Nandakumar**⁽¹⁰⁾, community psychiatric mental health nurse act as home advisors and visits families on regular basis to introduce new idea and methods to provide stimulation and use technique to developing skills. Provide families anticipatory guidance to prepare child adequately for increasing independence. Also instruct families to keep channels of communication opened with children and others is necessary.

Significance of the study:

Raising a child with autism is one of the hardest things a parent. Confronts. It is an overwhelming challenge. There are strategies which parents can the level of abnormal behavior to help the child's ability to cope. There is now well established evidence that early interventions, appropriated adapted to each (parent and their autistic children). Can have a significant impact by reducing behavioral problems and in helping children to an optimal development⁽¹¹⁾. Thus the nurse is can provide the family caregivers with the needed information and practice through an educational program designed to fulfill the aim of the study.

Aim of the study

The aim of the current study is evaluating the effect of educational program on caregivers (knowledge and practicing) toward their autistic children.

Research hypothesis

- There is a relation between caregivers knowledge improvement and the caring for their autistic children
- There is a relation between caregivers practice improvement and the caring for their autistic children
- There is a relation between caregivers knowledge& practice improvement and the caring for their autistic children
- Caregivers who participated in educational program will exhibit improvement in their knowledge and practice for their autistic children

2. Materials and Methods

Research Design:

Quasi-experimental design was utilized in this study

Setting:

This study was carried out in two different settings, out – patient clinic in abassia psychiatric mental health hospital & social and preventive centre, Cairo University. Caregivers who agreed to participate in the study were visited by the researchers in their home to observe their actual practices immediately after the program implementation.

Sampling

Systematic random sample included 100 children with Autism Spectrum Disorder and their caregivers. They were recruited from, out – patient clinic in Abassia psychiatric mental health hospital Cairo, Egypt & social and preventive centre, Cairo University

Inclusion criteria

- Diagnosed children with Autism Spectrum Disorder
- Aged from 4-12 years, both sex

Tools for data collection

Three tools were used for data collection

- 1 -Socio demographic data sheet For both children and their parents, consists of age, gender, educational level, occupation marital status, family size, income /month, crowding index.
- 2- Questionnaire sheet to assess knowledge of care givers about autism it contains (meaning, causes, symptoms, treatment, social and emotional Needs). This part was consists of 56 items (24) items from close – ended questions and (32) true and false question's. by using the following scoring system. A correct response was scored (2) and incorrect (1) then the total score of study subject Knowledge was calculated by the summations of the scores of the components questions, if the total score at least 50% of correct answer. The Knowledge was considered as appropriate, while if the total scores of the study subject less than (50%) they had in appropriate knowledge.
- 3-Observation checklist was used to assess the caregivers practice toward their autistic children this sheet is consists of (48) items it includes the following:

Part (1):

Self – care or activities of daily living for their autistic children it contains (16) items. as hygienic care, eating, illumination

Part (2):

Assess motor skills for the children as (growth of motor skills it includes (8) items.

Part (3):

Related to social and emotional skills of children as improving social attitude of the child play, with his family member or his peer and capability of the child to gain any Response ability as home duties, feeling of child about his family. It included items (6).

Part (4): consists of (12) items, referred to fine motor skills

Part (5):

It consists of (5) items were assessed practice of caregiver with autistic children. by using observation checklist through home visit Three point lick ret scale: 1= Never, 2= sometimes and 3 = always total score practice of (50%) and more it was represented a satisfactory practice, if the total score of study subject less then (50%) was represent male practice.

Pilot study

A pilot study was done to test feasibility and clarity of tools and time required to be applied .Simple modification was done as revealed from the pilot study results by omission of some items of questionnaire sheet for caregivers practice that they were not consistent with this study .A total of 10 subjects were recruited for the pilot study and excluded from total sample

A content validity was done by five expert professors in Community and psychiatric nursing .faculty of nursing, Cairo University.

Ethical Considerations:

The agreements for participation of the subjects were taken after the purpose of the study was explained to them. Before data collection, the care givers and children were informed about the aim of the study and what would be done with the results. They were given an opportunity to refuse participation on the study and they were notified that they could withdraw at any stage of the research. Also, they were assured that the information would remain confidential and used for the research purpose only..

Procedure

An actual fieldwork was carried over six month's period from March 2010 to September 2010. The following detailed description of the steps involved in the development, implementation and evaluation of the educational program:

1-Preparatory Phase:

An official and ethical permission were obtained from the directors of El –abassia mental hospital and social & preventive centre, Cairo University. Appropriate ethical review and approval was completed with the director .Once permission was granted to proceed with the study, the investigator started allocation of potential subjects for data collection. Those eligible according to the predetermined sample selection criteria were given a detailed explanation of the purpose and nature of the study to gain their cooperation participation to the program. They were insured that participation is voluntary and that their data are kept confidential. Those who accepted to participate were then filled an informed consent. The baseline questionnaires were then collected.

2- Implementation Phase

The total number of the sample 100 caregivers and their children, they was divided into 7 groups 14-

15 caregivers in each group. The program was introduced to each group separately 2 sessions /week of in a period of 4 month the total numbers of sessions about 32 session each session is ranged from 30 - 45 minutes for knowledge and practice the content of knowledge involve items about meaning of autism ,causes of autism signs and symptoms , medical examination ,type of treatment ,social needs and emotional needs. Also the content of practice skills was about self care activity fine motor skills, gross motor skills social-emotional skills and speech/language skills.

In the first session pre-test was done and objective of the program were explained to the caregivers the teaching strategy includes lectures, discussion, role play and demonstration using real objects .Also, handouts of the educational program was given to care givers.

3-Evaluation phase

Evaluation of the effectiveness of the educational program done immediately after program implementation through home visits by reassessing the caregivers' knowledge and practice for their children by using the same Questionnaire (post test).

Statistical Analysis

After completing the data collection, data were coded and transferred into a specific designed format to be suitable for computer feeding .All data were verified for any error .The Statistical Package for Social Science (SPSS) was utilized for statistical analysis and tabulation. The following statistical measures were used;

Descriptive measures include number, percentage, arithmetic mean, standard deviation. Paired sample t-test was utilized in this study.

3. Result

Table (1) : it was found that, more than half of the autistic children (68%) aged 8-12 years. And less than three – fourth of them (72%) were males . As regard educational class, (41%) were primary3/4. and more than three – fourth (84%) were 3 or more ranking.

Table(2): Shows that more than half of participant caregivers (62%) aged between 30 – 39 years. As regard education, less than one – fourth of them (23%) were illiterate , two – fifths (40%) had secondary education and more than one. Tenth (11%) were university graduates less than one- third of them (31%) were employed – most of them and (52%) from them had first degree of consanguinity relationship, less than one fourth (21%) had attending educational courses about how to care of the autistic children.

Table (3): As shown in table(3)it was found that (80%) from study subject are resident in rural area While (88%) from caregivers lives in extended

families and they had 7 members or more than. Two – third of the families (76%) had 3or more person / room.

Table (4): study results shows that knowledge score of the caregivers as regard " basic knowledge " items about autism (meaning, causes, symptoms medical examination, types of treatment, social and emotional needs) were improved significantly after program implementation at ($P<0.05$).

Table (5) : Results clarify that, the caregivers practice regarding " skills domain intervention as" items about autism care (self – care , fine motor skills and grass activities, social and emotional skills) were improved significantly after program at ($P<0.05$) .

Table (6): Shows that before program implementation , mean total knowledge score of caregivers about their autistic children was (35.5 ± 12.1) However, after program, implementation the mean total knowledge score of caregivers was improved significantly (46.1 ± 15.0) $P < 0.05$

Table(7): Shows that mean of total knowledge scores of caregivers before and after educational program were significantly distributed according to their age, education , occupation, income and crowding index, while mean total practice scores of care givers were significantly distributed according to their age, education, occupation, income and crowding index, $P<0.05$.

Table (8): Shows that a statistically significant different were detected between caregivers, mean knowledge and practice score before and after program implementation.

Table (1): Characteristics of autistic children N(100)

Variable	0/0
* Age /Year	
4-	32.0
8-12	68.0
* Gender	
Male	72.0
Femal	28.0
* Education class	
K G Grade	8.0
Primary 1-2	24.0
Primary 3-4	41.0
Primary 5-6	27.0
* Ranking	
<3	84.0
3+	16.0

Table (2): Characteristics of caregivers with autistic children N(100)

Variable	%
Age group/Year	
20-	62.0
30-	22.0
40+	16.0
Education level	
Illiterate	23.0
Read and write	16.0
Primary and preparatory	10.0
Secondary	40.0
University	11.0
Occupation	
Employment	31.0
Unemployed	69.0
Marital status	
Married	97.0
Widow	2.0
Divorced	1.0
Parents consanguinity relationship	
First degree	52.0
Second degree	32.0
No relation	16.0
Attending education courses tism care	
Yes	21.0
No	79.0
Name of attendant courses	
How to care for autistic children	11.0
Engage autistic children in community communication-with autistic childre	2.0
	8.0

Table (3) : Socio Characteristics of families with autistic children N (100)

Variable	%
Family residence	
Urban	3.0
Semi-urban	17.0
Rural	80.0
Family type	
Nuclear	12.0
Extended	88.0
Family size	
3-	3.0
5-	9.0
7-	88.0
Number of rooms	
1-	76.0
3-	21.0
5+	3.0
Growiding index	
<2	76.0%
2->3	24.0%
Monthly income (L.E)	
<200	20.0
200-	49.0
400-	19.0
600+	12.0

Table (4): Knowledge score (Mean \pm SD) of the studey subject about autism before and after educational Program N(100).

Knowledge	Before	After	T Test	P Value
	Mean \pm SD	Mean \pm SD		
Meaning of autism	1.7 \pm 0.6	2.8 \pm 0.5	13.8	<0.05*
Causes of autism	1.93 \pm 0.6	2.7 \pm 0.6	8.6	< 0.05
Signs and symptoms	1.82 \pm 0.5	2.2 \pm 0.6	4.75	<0.05*
. Medical examination	1.34 \pm 0.5	1.62 \pm 0.5	3.5	<0.05*
** Type of treatment	7.3 \pm 4.2	11.9 \pm 3.2	8.7	<0.05*
.**Social Needs	5.64 \pm 1.9	7.4 \pm 1.4	7.3	<0.05*
**Emotional Needs	4.2 \pm 1.5	5.2 \pm 1.3	4.8	<0.05*

*Statistically significant. $P < 0.05$

** Not mutually exclusive answer

Table (5): (Mean \pm SD) of the study subject practice scores regarding to skill domains intervention before and after educational program N (100)

Skill domain interventions	Practice		T test	P Value
	Before	After		
	Mean \pm S.D	Mean \pm S.D		
Self care skills	12.2 \pm 4.0	14.2 \pm 3.4	3.8	<0.05*
Fine motor shills	4.37 \pm 1.6	5.9 \pm 2.0	4.6	<0.05*
Gross motor skill	3.4 \pm 1.0	5.3 \pm 1.3	11.9	<0.05*
Social-Emotional skills	3.7 \pm 1.3	5.5 \pm 1.2	10	<0.05*
Speech/language skills	7.4 \pm 2.5	9.1 \pm 3.0	4.4	<0.05*

* Statistically significant. $P < 0.05$

Table(6): Total knowledge score (Mean \pm S.D) of study subject before and after intervention of educational program according to their age, education , occupation, Family size, residence, attendance educational courses and crowding index.

Variable	Know ledge		T Test	P Value
	Before Mea \pm S.D	After Mea \pm S.D		
Age group/year				
20-	2.9 \pm 15.4	46.5 \pm 14.8	8.3	*P< 0.05
30-	37.6 \pm 17.5	50.7 \pm 10.6	6.2	<0.05*
40+	27 \pm 16.1	39.6 \pm 18.3	5.04	<0.05*
Educational level				
Illiterate.	20.4 \pm 8.2	29.9 \pm 18.0	9.9	P<0.02
Read and write.	22.2 \pm 10.6	38.8 \pm 18.1	7.9	<0.05*
Primary/preparatory.				
Secondary.	37.8 \pm 17.2	52.2 \pm 8.0	8.0	<0.05*
University.	45.8 \pm 12.4	54.0 \pm 0.0	6.8	<0.05*
Occupation.				
Employed.			6.5	<0.05*
un-employed	32.5 \pm 17.0	46.8 \pm 14.5	7.3	<0.05*
Monthly income(L.E)				
< 200				
69			7.6	<0.05*
200-	28.7 \pm 15.5	45.1 \pm 15.6		
400-				
31			6.6	<0.05*
600+	34.8 \pm 17.4	48.0 \pm 13.7		
Family residence				
Urban			8.2	<0.05*
Semi-urban	36.5 \pm 18	54.0 \pm 0.0	7.3	<0.05*
Rural	32.8 \pm 15.9	49.8 \pm 12.0	8.1	
Family size	30.0 \pm 16.4	45.0 \pm 15.7		
3-			6.3	<0.05*
5-	36.0 \pm 10.0	50.8 \pm 10.5	6.5	<0.05*
7+	34.0 \pm 14.1	49.4 \pm 12.1	7.6	<0.05*
Crowding index	30.1 \pm 16.5	46.9 \pm 14.5		
<2			5.2	<0.05*
2->3	34.6 \pm 15.8	44.6 \pm 16.3	6.1	<0.05*
Attending educational courses of autism care.	32.1 \pm 16.0	47.7 \pm 15.0		
		50.6 \pm 10.8		
Yes	37.7 \pm 17.9	32.9 \pm 10.8	5.8	<0.05*
No	28.7 \pm 15.4		3.3	P<0.01

* Statistically significant. $P < 0.05$ **Table (7): Total practice score (Mean \pm S.D) of study subject before and after educational program according to their age, education, occupation, Family size, residence attending courses and crowding index.**

Variable	Practice		T Test	P Value
	Before	After		
Age group /years:				
20-	28.3 \pm 15.9	42.3 \pm 13.2	7.0	<0.05*
30-	35.4 \pm 17.1	40.8 \pm 12.7	4.9	<0.05*
40-	26.8 \pm 16.2	37.9 \pm 17.6	4.6	<0.05*
Education:				
Illiterate.	19.7 \pm 8.1	32.5 \pm 18.3	6.4	<0.05*
Read and write.	20.8 \pm 8.6	34.8 \pm 17.9	7.3	<0.05*

primary/preparatory.				
Secondary.	31.3±16.9	41.9±15.0	7.3	<0.05*
University.	32.9±16.5	43.7±15.1	6.1	<0.05*
Occupation:				
Employed.	30.7±16.9	42.1±15.0	5.0	<0.05*
Un-employed	27.3±16.2	40.4±15.2	5.0	<0.05*
Monthly income /L.E				
<400	26.9±16.5	34.7±17.8	5.2	<0.05*
400->600	29.8±15.5	37.9±17.6	4.8	<0.05*
family residence				
Urban	31.5±16.2	45.4±15.9	6.04	<0.05*
Semi-urban	30.2±16.4	42.8±15.2	5.5	<0.05*
Rural	29.4±15.9	39.6±16.5	4.7	<0.05*
Family size:				
3-			7.4	<0.05*
5-	29.5±15.5	43.6±15.3	6.1	<0.05*
7+	28.2±15.7	41.5±15.0	4.5	<0.05*
Corwding index	27.7±15.9	38.7±16.7		
<2			3.9	<0.05*
2->3	31.8±16.3	40.3±15.2	5.03	<0.05*
	28.4±15.7	39.1±16.5		
Attendance courses				
Yes	30.8±16.9	45.9 ± 15.8	6.6	<0.05*
No	21.4 ± 8.5	26.4 ± 12.5	7.9	<0.06*

* Statistically significant. $P < 0.05$

Table (8): Total Mean knowledge and practice scores of study subject before and after educational program N(100)

Items	Before	After	T Test	P Value
	M±SD	M±SD		
knowledge score (1-54)	35.5 ±12.1	46.1±15.0 85.4%	5.6	<0.05*
Practice score (1-48)	30.6±16.3 56.7%	39.3±11.4	4.7	<0.05*

*Statistically significant. $P < 0.05$

4. Discussion

Accurate knowledge of autism may aid parents in relating to their children 'difficult behavior. Reading up on and accepting autism may promote feelings of parenting success. Depression and stress are two ailments parents experience in rearing a child with autism

Results of this study revealed that caregivers knowledge and practice regarding their autistic children care were lacking which improved immediately after the program implementation. This finding is similar to **Culture of Saudi Arabia** (12), who found that the level of mothers knowledge and practice regarding their care of preschool autistic children were unsatisfactory which improved immediately after the program implementation. Qureshi *et al* (13) emphasized that continuing education is very much needed to teach mothers how to master

psychomotor skills as it could be expected that repeatedly carried out tasks would have higher score.

Further more. **Qureshi *et al.*** (13) Found that, Educational interventions, including behavioral strategies and facilitative therapies, are the cornerstones of management of autistic disorder. These interventions address communication, social skills, daily-living skills, play and leisure skills, academic achievement, and maladaptive behaviors. Optimization of medical care is also likely to have a positive impact on facilitative progress and quality of life. In addition to routine preventive care and treatment of acute illnesses, management of, coexisting challenging behaviors or psychiatric conditions, and associated medical problems, such as seizures, may be particularly important

On investigating the relationship between mothers' knowledge, practice and their education the

present study revealed highly significant relationship. It is well known that the level of mother's education is very important. Illiterate mothers had little knowledge, poor practice and attitude about all aspects of autistic child care and needs of their children. Moreover, supported such findings and mentioned that more educated mothers were more receptive to information about herself and her child health care.

As regard the relationship between the caregivers knowledge, practice and their employment, the present study revealed that working caregivers can affect children care. This is in agreement with results of (15), who stated that children of working mothers have a good chance for a better improvement. The working mothers have a chance to interact with their colleagues who facilitate the exchange of ideas about child care. These findings were different from those of the study of **Culture of Saudi** (12), which revealed that working mothers spend more time to perform various activities. Mother had less time devoted to themselves for self care, food preparation and feeding. In the same line, **Qureshi N.A. et al.** (13). Added that, The relatively less severe impact of the child's autism on most of the fathers appeared to be at least partially due to the gender roles connected to work and child rearing (13,16). In a few cases, fathers acknowledged that their child's autism might have encouraged a greater commitment to work. However, this does not mean that they were not emotionally distressed by their child's autism. They also had considerable concern about their child's future. In this regard, they may have seen helping their child to reach financial independence as being consistent with their role.

On investigating the relationship between mothers' knowledge and practice on one hand and family income on the other hand, this study revealed significant relation according to family income and crowding index. This finding is in agreement with that of **Nassar et al.** (17), who found that family income affects the growth of children, the higher the income the better the chance for care. **Elsayed** (18) mentioned that parental characteristics are the strongest predictor of poor health for children as low-income mothers.

Having a child on the autism spectrum can drain a family's resources due to expenses such as evaluations, educational programs, and various therapies. The care-taking demands of nurturing for a child with autism may lead one parent to give up his or her job, financial strains may be escalated by only having one income to support all of the families' needs (19).

Caregivers often do not know how to help and may feel unprepared to meet the patient's demands. They may also deny their own feelings while trying to provide support for the patient. This can result in heightened anxiety and depression. Various barriers

which include lack of awareness or knowledge, financial constraints, stigma of accepting help, family resistance, transportation issues, depletion of existing services, and incongruent goals between the health care providers and the patient. (19, 20),

In relation to the family size and mothers' knowledge and practice, this study revealed no significant relationship between family size and caregiver knowledge and practice. This is in disagreement with **Rosenberg et al** (21), who mentioned that mother with families that are too large for them to cope with and with financial worries may require all their resources to feed the children and are unlikely to be able to have much time to sit and talk.

Mean total knowledge scores of caregivers were significantly distributed according to their crowding index. Higher mean total knowledge scores were associated with lower crowding index, while lower knowledge scores were associated with higher crowding index. However, this study revealed that crowding index was significantly related with caregivers' practice.

Conclusions:

The study concluded that, educational program was effective for caregivers' improvement in their knowledge and practice regarding their autistic children.

Recommendations:

- The study recommended that increasing caregiver's competence requires training family caregivers in the skills they need to provide comprehensive care, including information about the illness, and how to improve their relation with their children.
- Mass media should play a significant role to disseminate the needed information about child health care.
- Nurses should receive adequate training courses in children care (physically, emotionally and socially). In order to improve their skills in health education for mothers toward their children care.
- A multidisciplinary team consisting of pediatric, psychiatrist, nurses and social workers should be involved in teaching and helping children and caregivers to be managed from apparently common sequence of emotional reactions and to help them all live with their disabled child.

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