

## Assess Knowledge, Practice, and Stress levels among Care Givers of children with autism at Beni-Suef City

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### Abstract

**Background:** Caregivers of children with autism face a series of challenges. Lack of awareness or inaccurate information regarding autism spectrum disorder prevents Caregivers from noticing the early signs of autism and also experience high levels of stress **Aim:** This study aimed to Assess caregivers who have children with autism Knowledge, Practices, Stress, and coping strategies methods **Design:** Descriptive cross-sectional design was utilized in this study. **Setting:** The current study was conducted in the psychiatric outpatient clinic of Beni-Suef University Hospital, the conversational patient in insurance health I, Alwan Special Center, Kian Special Center, right to Life Private Association, and Dar Al-Shifa Foundation **Sample:** A convenience sample of one hundred caregivers **Tools:** Three tools were used for data collection, **First tool** structured interviewing questionnaire to assess socio-demographic data and Caregivers' knowledge, **Second tool** Caregivers' practice. **The third tool** assesses Stress and coping Strategies. **Results:** the majority of studied caregivers were female, more than half had basic education, (and 90%) of studied caregivers had an unsatisfactory knowledge level. 46% of studied caregivers had moderate stress levels, and All of the studied caregivers had incompetent practice levels. 72% of studied caregivers had high coping levels **Conclusion** The knowledge and practices of the studied caregivers regarding caring for their children with autism were incompetent. nearly half of the sample suffered from moderate stress levels, the other had nearly a quarter of them had high coping strategies for dealing with the problem **Recommendations:** The necessity of Providing health education, and counseling programs to improve caregivers' knowledge, skills, and coping patterns toward the care of their children with autism

**Keywords:** Knowledge, Practice, Stress, Care Givers, children, autism

### Introduction

An autism spectrum disorder (ASD) refers to a wide of complex developmental disorders that typically appear during the first three years of life. The three core features of ASD are impairments in social interactions, impairments in verbal and nonverbal communication, and restricted and repetitive patterns of behavior (*American Psychiatric Association, 2013*).

Furthermore, many children with autism display maladaptive and aggressive behaviors (e.g., hitting, throwing objects, spitting). In addition, children with autism vary in their level of functioning (i.e., adaptive and cognitive functioning), which can be viewed by their caregivers as difficult to manage and possibly embarrassing. The combination of these symptoms and the presence of problem behaviors can create varying and distinct challenges for caregivers of individuals with autism (*Donnelly, 2015*).

This surveillance study identified 1 in 68 children as having autism spectrum disorder (ASD) (Center for Disease Control and Prevention (CDC), 2014). According to the National Institute of Neurological Disorders and Stroke (NINDS, 2014), ASD occurs four times more frequently in boys than in girls. If girls do not have noticeable intellectual impairment or language delays, they may go unrecognized for a longer period. Couples with one child with ADS have roughly a 5% chance of having another child with ASD (*Duffett, 2016, Bressette, 2017; Fatoorechi, 2017*).

Caregivers of children with autism are faced not only with normal life stress but also with stressors that are unique to their children's condition. They not only have to cope with their children's characteristics such as challenging behaviors, reduced intellectual functioning, physical limitations, deficits in self-care abilities, and limited social skills, but also have to face

stigma arising from the different cultural interpretations of disability. This may lead to an increase in stress (*Sylvia, 2014*).

In addition, *Debbie et al. (2017)* were found to have increased symptoms of depression and greater emotional and psychological distress than parents of typically developing children. Due to a great amount of pressure is often placed on the family when raising a child with an ASD. Families must cope with the initial diagnosis, explore intervention services, adjust their parenting coping styles, and manage the cost of paying for services. Some caregivers may experience posttraumatic stress symptoms. Other caregivers may feel a sense of relief that their concerns about their child have been confirmed. Positive reactions can also include a sense of relief with a diagnosis.

A major goal in working with the family of a child with autism is to support family coping and promote optimum family functioning throughout the child's life. Nurses can help families cope with stress by providing anticipatory guidance, providing emotional support, assisting the family in assessing and identifying specific stressors, and aiding the family in developing coping mechanisms and problem-solving strategies (*Sylvia, 2014*).

Family counseling also can help the family better understand the disorder and assist them with coping strategies and behavioral modification therapies, in some situations, home care is available to assist with the child's physical or behavioral management in the home. And with the child's disruptive behavior persists alternative residential placement may be necessary (*Gersch et al., 2016*).

### **Significance of thy study**

Caregivers of children with autism also face a series of challenges, some of which are related to information and misconceptions regarding their children with autism in terms of their characteristics and the provision of services and early intervention services. Most of these challenges may be similar in their impact on parents with autism spectrum disorder in general (*Qureshi, 2016, Benallie, 2019*).

Lack of awareness or inaccurate information regarding autism spectrum disorder prevents parents from noticing early signs of autism, and caregivers of children with autism may suffer from high levels of stress, resulting in disruption in lifestyle and relationship, deprivation

of human need, and failure to act in ways to eliminate the case of psychosocial problems, Parents of children with autism experience greater stress, depression, anxiety and other negative health outcomes than parents of children with other disabilities (*Baker, 2012*).

### **Aim of the Study**

This study aimed to assess Knowledge, Practice, and Stress levels among caregivers of children with autism at Beni-Suef City through:

- 1- Assess caregivers who have children with autism Knowledge and practices among this problem.
- 2- Assess stress for caregivers who have children with autism.
- 3- Assess coping strategies and methods for caregivers who have children with autism.

### **Research questions:**

- 1- What are the knowledge and practice of caregivers having children with autism?
- 2- Is a present stress for caregivers who have children with autism?
- 3- Can the caregivers who have children with autism use the coping strategies method?

### **Subjects and Methods**

**Subjects and methods of the study have been portrayed under four main topics as follows:**

- 1- Technical design.
- 2- Operational design.
- 3- Administrative design.
- 4- Statistical design.

#### **D) Technical design:**

The technical design included research design, setting, subjects, and tools for data collection.

#### **Research design:**

A descriptive cross-sectional design was utilized in this study.

#### **The setting of the study:**

The current study was conducted in the psychiatric outpatient clinic of Beni-Suef University Hospital, the conversational patient in insurance health 1, Alwan Special Center, Kian Special Center, right to Life Private Association, and Dar Al-Shifa Foundation. The outpatient clinic in Beni-Suef University Hospital was located in the clinic building on the second floor and consisted of one clinic. The outpatient clinic in the Insurance health hospital

is located on the fourth floor and consists of four clinics. Alwan Special Center. Kian special center which is located on the first floor and consists of three clinics. Right to Life private association which is located on the second floor and consists of four clinics. Dar Al-Shifa Foundation which located on the second floor and consists of two clinics.

### Subjects:

A convenient sample of all available caregivers (100 caregivers) who had children diagnosed with autism was taken from the above-mentioned setting.

### The Inclusion criteria:

- All adult persons who have autism person.
- Both genders.
- Oriented person.
- Caregivers who agree to participate in our study.
- Caregivers living in the same environment as their autistic children

### Tools of data collection:

Data were collected using the following **three tools** included:

#### Part I: Demographic data (Appendix I)

- A- Demographic characteristics of the caregivers' which consisted of age, gender, residence, educational level, marital status level of education and occupation....etc.
- B- Demographic characteristics of autistic children which include; age, gender, degree of autism, and children's IQ...etc.
- C- caregiver, Surrounding environment information which includes; family income, the number of people in the house, the number of rooms in the house the number of family members, cleanliness, ventilation, and degree of crowding...etc.
- D- Medical history of autistic children which includes; suffering from other diseases associated with autism disorder, long-term medications for treating the other diseases and physical disabilities with autism spectrum disorder, and information sources of studied caregivers regarding autism...etc.

#### Part II: Caregivers' Knowledge (Appendix II)

It was adapted from *Zeidan et al.*

(2022) and it was aimed to assess caregivers' knowledge regarding autism disorder and include: the meaning of autism, diagnosis method, describe the autistic child, treatment.....etc.

### Scoring system:

Items total global score of 34 for 34 subitems, were rated on two ranks (incorrect answer scored= 0 and correct answer score 1).

The total score of this part is classified into subcategories based on the following:

- Satisfactory knowledge level of score  $\geq 60\%$  (20.4 to 34 score).
- Unsatisfactory knowledge level of score  $<60\%$  ( $<20.4$  scores).

### Part IV: Caregivers' Practice: (Appendix III)

It was adapted from *Kaman et al.* (2023) and it was aimed to assess caregivers' practice regarding caring for autistic children indoors and outdoors which includes:

- 1- Nutrition which includes; training the child to participate in bringing and placing food, training the child to feed himself/herself, and training the child to use a cup to drink, and using a straw to drink liquids..etc.
- 2- Defecation which includes; taking good notes and knowing when the baby pees, making a daily schedule and taking the child to the bathroom regularly at fixed times, and getting the child back to the bathroom after every meal regularly..etc.
- 3- Personal hygiene which includes; training the child to wash his/her hands before and after eating, I train the child to brush his/her teeth, and train the child to clean his/her nose..etc.
- 4- Clothing which includes; training the child to wear his/her underwear first and then sleep or go out and training the child to undress and for the child to wear the shoes alone..etc.
- 5- Sleep which includes reading stories that are not frightening and age-appropriate, about five minutes before bedtime every day and I change position from sleeping to sitting next to him/her with constant touching..etc.
- 6- Social skills of a child with autism which include; encouraging the child to establish relationships with other children through group play and the free choice of friends and assigning the child a role in family participation..etc
- 7- Attention and focus skills for a child with autism which include; I reached the child's

gaze for a certain thing for a long time and I reward the child if he responds with me..etc

- 8- Language communication skills for a child with autism which include; using one word or short sentences when talking to the child and using a picture or a picture referred to when talking to the child, to help train a specific skill..etc.
- 9- The motor skills of a child with autism include; I train the child in some simple exercises such as running and jumping and I train the child to hold a pencil and crayon..etc.

#### Scoring system:

Items total global score of 104 for 52subitems, were rated on two ranks as (no=0, sometimes=1 & yes=2).

The total score of this part is classified into subcategories based on the following:

- 1- Nutrition and defecation.
  - Adequate practice level of score  $\geq 60\%$  ( $\geq 9.6$  to 16 score).
  - Inadequate practice level of score  $<60\%$  ( $< 9.6$  score).
- 2- Personal hygiene
  - Adequate practice level of score  $\geq 60\%$  ( $\geq 4.8$  to 8 score).
  - Inadequate practice level of score  $<60\%$  ( $< 4.8$  score).
- 3- Clothing and sleep.
  - Adequate practice level of score  $\geq 60\%$  ( $\geq 3.6$  to 6 score).
  - Inadequate practice level of score  $<60\%$  ( $< 3.6$  score).
- 4- Social skill
  - Adequate practice level of score  $\geq 60\%$  ( $\geq 5.4$  to 9 score).
  - Inadequate practice level of score  $<60\%$  ( $< 5.4$  score).
- 5- Attention and focus skills
  - Adequate practice level of score  $\geq 60\%$  ( $\geq 6$  to 10 score).
  - Inadequate practice level of score  $<60\%$  ( $< 6$  score).
- 6- Language communication skills and motor skills.
  - Adequate practice level of score  $\geq 60\%$  ( $\geq 7.2$  to 12 score).
  - Inadequate practice level of score  $<60\%$  ( $< 7.2$  score).

The total score of this part classified into the

following (104 for 58 subitems)

- Adequate practice level of score  $\geq 60\%$  ( $\geq 62.4$  to 104 score).
- Inadequate practice level of score  $<60\%$  ( $< 62.4$  scores).

#### Part V: Stress for Care Givers: (Appendix IV)

It was adapted from *Ezzat (2017)* and it was aimed to assess caregivers' stress with their autistic children which includes;

- 1- The domain of stress related to the characteristics of children with autism disorder..etc.
- 2- The area of pressures related to support services which include; financial needs, lack of community support for my autistic child..etc.
- 3- The field of stress related to family and social aspects and stress related to the personal and psychological side..etc.

#### Scoring system

Items total global score of 32 for 96 scores, were rated on two ranks (Much =1, sometimes=2 & rarely =3).

The total score of this tool is classified into subcategories based on the following:

- Low-stress level  $< 60\%$  ( $< 57.6$  scores).
- Moderate stress level  $60\%$  to  $< 75\%$  ( $57.6$  to  $< 72$  score).
- High stress level  $\geq 75\%$  ( $\geq 72$  score).

#### Part VI: Caregivers' Coping Strategies Inventory (PCSI) toward Care Givers: (Appendix V)

It was adapted from *Ezzat (2017)* and it was aimed to assess caregivers' coping with their autistic children which include; striving to improve the social and economic level of my family and overcome all obstacles that stand in the way of psychological and social adjustment for my autistic son..etc.

#### Scoring system

Items total global score of 19 for 57 scores, were rated on two ranks as (rarely=1, sometimes=2 & much=3).

The total score of this tool is classified into subcategories based on the following:

- Low coping  $< 60\%$  ( $< 34.2$  scores).
- Moderate coping  $60\%$  to  $< 75\%$  ( $34.2$  to  $< 42.75$  score).

- High coping  $\geq 75\%$  ( $\geq 42.75$  scores).
- 

## **II-Operational design:**

The operational design includes the preparatory phase, tools validity and reliability, pilot study, and fieldwork.

### **A) Preparatory phase:**

It included reviewing related literature and theoretical knowledge of various aspects of the study using books, articles, and internet periodicals and journals to develop tools for data collection.

### **B) Tool validity:**

Face and content validity was ascertained by a panel of five experts (3 Assistant professors and 2 lecturers of community health nursing) from the Faculty of Nursing, Beni Suf University. The experts reviewed the tools for clarity, relevance, comprehensiveness, simplicity, and applicability; minor modifications were done and the final forms were developed.

### **Reliability:**

- 1-The researcher explained to the committee that the study and the collection of information from the sample is voluntary without material return, and the participants have the right to refuse, withdraw, participate, or not participate at any time, and it is according to their opinions, and the participant will not be subjected to harm, damage, or any errors
- 2- The protocol and study tools were presented to the Scientific Research Ethics Committee at the College of Medicine on () and the content of the study was explained to the committee, and the committee's approval was obtained for the idea of research or study with their recommendations for implementation
- 3-In the present study, reliability was tested using Cronbach's Alpha coefficients for Appendix II was 729, appendix III was 0.783, appendix IV was 0.821, and Appendix 0.741.

### **C) A pilot study:**

The investigator does not do abasic/vital modification for the tool so the pilot study was included in the study.

### **(D) Fieldwork:**

The investigator explained the purpose of the study to autistic childcare caregivers. The actual work of this study started and was completed within six months from the beginning of June (2022) to the end of November (2022). And take the Caregivers' oral consent to participate

in the study, and the investigator needed 3 days every week to collect the data from the caregiver.

## **III-Administrative design:**

Official permission was obtained by submission of official letters issued from the dean of the faculty of nursing, Beni Suf University to the director of Beni-Suf University Hospital, Insurance Health Hospital, Alwan Special Center, Kian Special Center, right to Life Private Association and Dar Al-Shifa foundation. The investigator provided and explained the Arabic protocol and the tool for all of them.

The investigator promises that the study and the collection of information from the sample is voluntary without material return, and the participants have the right to refuse, withdraw, participate, or not participate at any time, and it is according to their opinions, and the participant will not be subjected to harm, damage, or any errors

## **4) Statistical design**

The data were collected, coded, and entered into a suitable Excel sheet and analyzed using an appropriate statistical method. Data were analyzed using the Statistical Program for Social Science (SPSS) version 26.0, quantitative data were expressed as a mean  $\pm$  standard deviation (SD), and qualitative data were expressed as frequency and percentage. T-test is used when the cell sizes are expected cell sizes $<5$ . A Chi-square (X<sup>2</sup>) test of significance was used to compare proportions between qualitative parameters. Pearson's correlation coefficient test (r) was used to conduct the correlation matrix. Statistical significance was considered at P value  $<0.05$ , less than 0.001 was considered highly significant (\*\*\*) and the correlation coefficient was done by using the Pearson correlation test.

## **Results:**

**Table (1)** shows that more than one-third (40%) of studied caregivers their age group from 30 to less than 40 years with mean $\pm$ SD 34.83 $\pm$ 8.25, 25% of them were from Kaian special center, 70% of them were females, 60% of them were from urban, 40% of them had basic education, 80% of them were married, 60% of studied fathers had a private job and 50% of studied mothers' had no work.

**Table (2)** reveals that more than half (58%) of studied caregivers did not have enough family income, 85% of them had 2 to 5 persons

in the house, 60% of them had enough rooms in the house, 89% of them had adequate cleaning house condition, 60% of them had good ventilation in the house and 70% of them had no crowded house.

**Table (3)** illustrates that less than half (45%) of the children with autism in their age group from 5 to less than 10 years with mean±SD 8.55±3.44, 84% of them were male and 57% of them had mild autism with mean±SD of IQ was 81.04±18.78.

**Table (4)** illustrates that the majority (89%) of studied autistic children hadn't suffered from other diseases and did not take long-term medications. While 100% of them had no disabilities.

**Table (5)** shows that one-third (33%) of studied caregivers had reported all of the above regarding the source of information on autism, 30% of them reported that the severity of autism is a little dangerous, 60% of them didn't attend any courses related to autism and 60% of them reported all of the above regarding information about the concerned authorities that provide services for autistic children

**Table (6)** reveals that the majority (80%) of studied caregivers had correct answers regarding autistic children using gestures and signs instead of talking. While 79% of them had incorrect answers regarding autistic children's unexplained emotions (anger-joy-crying).

**Figure (5)** illustrates that the majority (90%) of studied caregivers had unsatisfactory knowledge levels. While (10%) of them had a satisfactory knowledge level regarding autism.

**Table (6)** shows that two-thirds (66%) of the studied caregivers had a competent practice level regarding the social skills of a child with autism. While, (98%, & 99%) respectively, of them had incompetent practice levels regarding attention and focus skills, language communication skills for a child with autism, and motor skills of a child with autism.

**Figure (6)** illustrates that 100% of the studied caregivers had incompetent practice levels regarding caring for their children with autism.

**Table (7)** reveals that 63% of studied caregivers reported that they feel sad that their son has difficulty learning, 54% of them reported that sometimes feel that the lifestyle of their autistic son makes them sad, other

children's looks make them sad when they go out with their autistic son and 82% of them rarely feel unhappy because of their autistic son.

**Table (8)** shows that 74% of studied caregivers were helping their autistic son break the routine and stereotyped behaviors, 45% of them sometimes help their autistic son to play with others and make friends and 44% of them rarely accept their son's disability and live with it.

**Table (9)** shows that 44% of studied caregivers had high stress levels regarding stress related to the characteristics of children with autism disorder, 46% of them had moderate stress levels regarding stress related to family and social aspects and 54% of them had low stress level regarding stress related to the personal and psychological side.

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**Table (9)** shows that 44% of studied caregivers had high stress levels regarding stress related to the characteristics of children with autism disorder, 46% of them had moderate stress levels regarding stress related to family and social aspects and 54% of them had low stress level regarding stress related to the personal and psychological side.

**Figure (7)** illustrates that 46% of studied caregivers had moderate stress levels and 27% of them had high and low stress levels.

**Figure (8)** shows that 72% of studied caregivers had high coping levels, 17% of them had low coping levels and 11% of them had moderate coping levels with the problem.

**Table (10)** reveals that there was a

statistically significant relation between caregivers' total knowledge level and their marital status. While, there was no statistically significant relation between caregivers' total knowledge level and their age, gender, residence, educational level, fathers' job, and mothers' job.

**Table (11)** reveals that there was a highly statistically significant relation between caregivers' total practice level and their demographic characteristics.

**Table (12)** shows that there was no statistically significant relation between caregivers' total stress level and their demographic characteristics.

**Table (13)** illustrates that there was no statistically significant relation between caregivers' coping strategies level and their demographic characteristics.

**Table (14)** shows that there was a strong positive correlation between stress related to family and social aspects, support services and stress related to the characteristics of children with autism disorder, pressures related to support services, and stress related to the personal and psychological side and there was a positive correlation between stress related to the characteristics of children with autism disorder, pressures related to support services and stress related to the personal and psychological side.

**Table (15)** reveals that there was a strong positive correlation between total practice and total knowledge, total stress level, and total coping level. There was a negative correlation between total knowledge level, total stress level, and total coping level.

**Table (1): Distribution of Demographic Characteristics of the Studied Caregivers. (n=100) Outpatient Unit's**

	N	%
<b>Age</b>		
from 20 to less than 30 years	36	36.0
From 30 to less than 40 years	40	<b>40.0</b>
From 40 to less than 50 years	21	21.0
50 years & more	3	3.0
	<b>Mean±SD 34.83±8.25</b>	
<b>Hospital name</b>		
Beni-Suef University Hospital	20	20.0
Insurance health Hospital	15	15.0
Alwan special center	15	15.0
Kian special center	25	<b>25.0</b>
Right to life private association	10	10.0
Dar Al-Shifa Foundation	15	15.0
<b>Gender</b>		
Male	30	30.0
Female	70	<b>70.0</b>
<b>Residence</b>		
Rural	40	40.0
Urban	60	<b>60.0</b>
<b>Educational level</b>		
Not read and write	10	10.0
Basic education	40	<b>40.0</b>
Secondary/or technical education	30	30.0
University education	10	10.0
Postgraduate education	10	10.0
<b>Marital status</b>		
Married	80	<b>80.0</b>
Divorced	20	20.0
<b>Fathers' job</b>		
Private	60	<b>60.0</b>
Government	40	40.0
<b>Mothers' job</b>		
Private	20	20.0
Government	30	30.0
Housewife	50	<b>50.0</b>

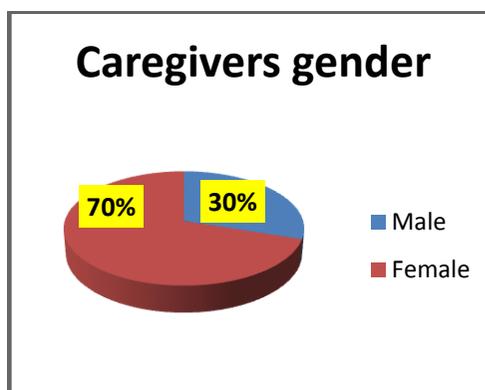
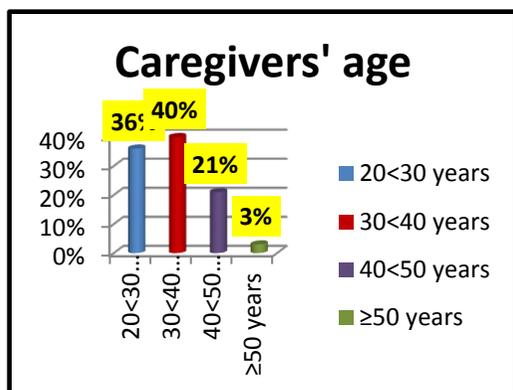


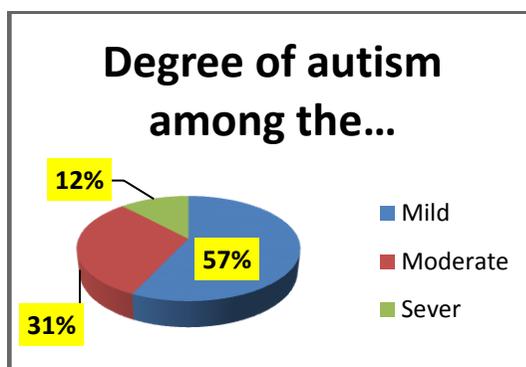
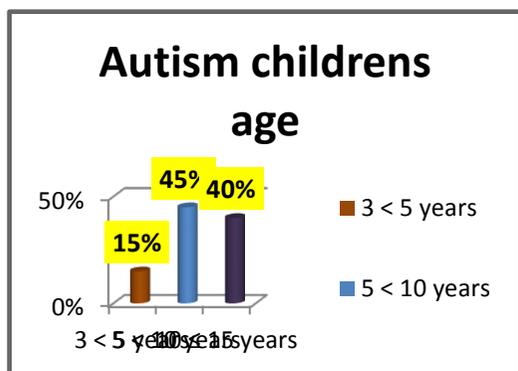
Figure (1): Percentage of the studied caregivers regarding their age (n=100). Figure (2): Percentage of the studied caregivers' gender (n=100).

Table (2): Distribution of Surrounding Environment Information (n=100). 2022 Out Patient's Unit's

	N	%
<b>Family income monthly</b>		
Enough	42	42.0
Not-enough	58	<b>58.0</b>
<b>Number of people in the house</b>		
2-5 person	85	<b>85.0</b>
6-10person	15	15.0
<b>The balance between room numbers related to family member</b>		
Enough	60	<b>60.0</b>
Not-enough	10	10.0
I don't know	30	30.0
<b>Cleaning of house</b>		
Adequate cleaning	89	<b>89.0</b>
not cleaning	4	4.0
I don't know	7	7.0
<b>Ventilation of house</b>		
Good ventilation	60	<b>60.0</b>
Bad ventilation	6	6.0
I don't know	34	34.0
<b>The house crowding</b>		
crowding	10	10.0
Not crowded	70	<b>70.0</b>
I don't know	20	20

Table (3): Distribution Of Demographic Characteristics Of Children with Autism. (n=100)

	N	%
<b>Age</b>		
From 3 to less than 5 years	15	15.0
From 5 to less than 10 years	45	<b>45.0</b>
From 10 to less than 15 years	40	40.0
	<b>Mean±SD 8.55±3.44</b>	
<b>Gender</b>		
Male	84	<b>84.0</b>
Female	16	16.0
<b>Degree of autism</b>		
Mild	57	<b>57.0</b>
Moderate	31	31.0
Sever	12	12.0
<b>Child's IQ</b>	<b>Mean±SD 81.04±18.78</b>	



**Figure (3):** Percentage of the studied autism children’s age (n=100). **Figure (4)** Percentage of the studied autism children’s degree of autism

**Table (4):** Distribution of Medical History of Studied Autism Children (n=100). 2022 Out Patient's Unit's

	N	%
<b>Present any diseases associated with autism disorder</b>		
None	89	<b>89.0</b>
Epilepsy	2	2.0
Attention deficit hyperactivity disorder (ADHD)	9	9.0
<b>present treatment for this disease</b>		
present	11	11.0
Not present	89	<b>89.0</b>
<b>Present Physical disabilities with autism spectrum disorder</b>		
Present	0	0
No	100	<b>100.0</b>

**Table (5):** Distribution Of Information Sources Of Studied Caregivers Regarding Autism (n=100).). Out Patient's Unit's

	N	%
<b>The mentioned sources of information</b>		
Audio-visual sources (television – radio)	28	28.0
family/friends	3	3.0
School/work	26	26.0
Modern technologies (the Internet)	2	2.0
Newspapers/magazines	1	1.0
Doctors / Nursing	2	2.0
All of the above	33	<b>33.0</b>
I don't have any information	5	5.0
<b>the severity of autism spectrum disorder on our son/daughter/family?</b>		
Very dangerous	20	20.0
Moderate severity	50	50.0
Little dangerous	30	<b>30.0</b>
<b>Did you take any courses about autism spectrum disorder</b>		
One course	11	11.0
2 courses	9	9.0
3 courses	10	10.0
More than 3 courses	10	10.0
Didn't attend any courses related to autism	60	<b>60.0</b>
<b>the concerned authorities that provide services for autistic children*</b>		
Social rehabilitation centers under the Ministry of Social Solidarity	10	10.0
Clinics for speech centers	20	20.0
Special centers	10	10.0
More than one place	60	<b>60.0</b>

\*Patients had more than one answer.

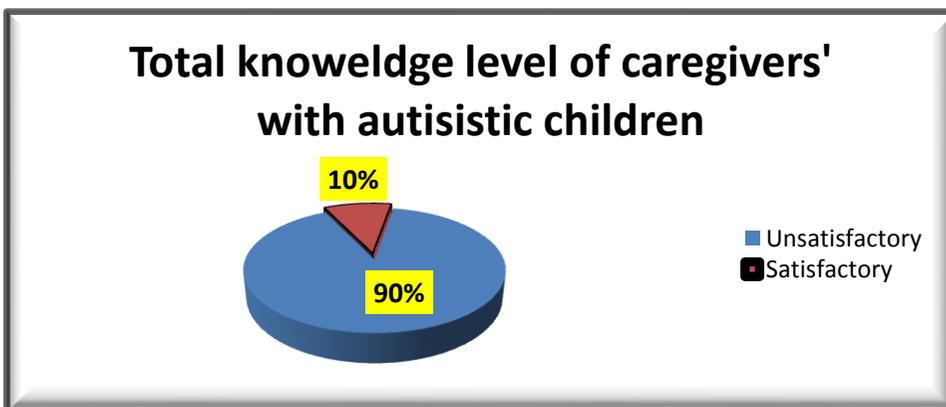
**Table (6):** Studied Caregivers' Knowledge Regarding Autism Children. (n=100)) 2022 Out Patient's Unit's

Item	Correct		Incorrect	
	No.	%	No.	%
Autism is the love of loneliness	55	55.0	45	45.0
An autistic child has a mental disability	41	41.0	59	59.0
Autism is due to genetics	41	41.0	59	59.0
I think that magic and envy by others may cause autism	50	50.0	50	50.0
Can a child with autism make friends?	26	26.0	74	74.0
The autistic child suffers from impaired ability to communicate verbally and nonverbally	46	46.0	54	54.0
A child with autism responds to commands from others	45	45.0	55	55.0
The autistic child does not respond to commands and appears as if he does not hear	47	47.0	53	53.0
The autistic child suffers from deficiencies in the development of verbal language	71	71.0	29	29.0
Repeats words and sentences over and over (repetition)	44	44.0	56	56.0
He does not communicate audibly with others	55	55.0	45	45.0
He can't express what's inside	58	58.0	42	42.0
Reflects pronouns when talking to others	57	57.0	43	43.0
Uses gestures and signs instead of speaking	80	<b>80.0</b>	20	20.0
Avoids looking directly into others' eyes (does not make eye contact with others)	45	45.0	55	55.0
Lacks common exchange in facial expressions	62	62.0	38	38.0
Laughing and crying in an incorrect and inappropriate manner	61	61.0	39	39.0
Uses appropriate facial expressions in his social interactions	40	40.0	60	60.0

Continue....., Table 6

Item	Correct		Incorrect	
	No.	%	No.	%
The autistic child hurts himself (such as hitting his head against the wall....)	55	55.0	45	45.0
He harms others	54	54.0	46	46.0
Refuses physical contact with others (hugs, handshakes)	18	18.0	82	82.0
Autistic children do not play with their peers	44	44.0	56	56.0
He lacks imaginative play as if he is riding on a stick as if it were a horse	62	62.0	38	38.0
The child is flapping his hands	66	66.0	34	34.0
The child shakes the body, walks on toes, clings to certain objects	54	54.0	46	46.0
Refuses games that require thinking or intelligence	40	40.0	60	60.0
The autistic child fulfills his daily needs (bathing, eating alone.....)	38	38.0	62	62.0
The senses in the autistic child are intact	46	46.0	54	54.0
An autistic child has unexplained emotions (anger-joy-crying)	21	21.0	79	<b>79.0</b>
His emotions are not suitable (anger-joy-crying) for the current situation	56	56.0	44	44.0
The autistic child shows fear of the dangers surrounding him (lighting, electricity...)	46	46.0	54	54.0
Autism can be diagnosed during the first year and a half of a child's life	47	47.0	53	53.0
Autism can be cured	48	48.0	52	52.0
Effective drug treatment for autism	47	47.0	53	53.0

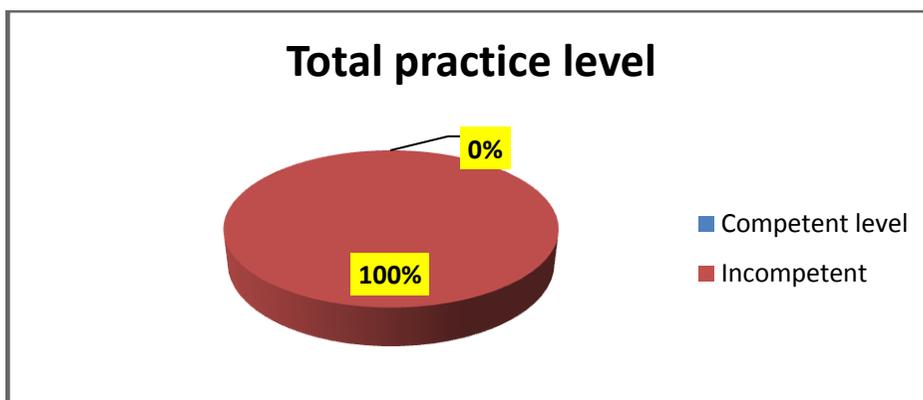
All the samples did not have a correct and complete answer



**Figure (5):** Total knoweldge level of caregivers with autistic children (n=100).

**Table (6):** The Total Caregivers Practice Regarding Their Autism Children Toward Sub items (n=100). (n=100).

Items	Adequate		Inadequate		Mean±SD	Minimum	Maximum
	N	%	N	%			
Nutrition	3	3.0	97	97.0	4.90±2.06	1.0	10.0
Defecation	5	5.0	95	95.0	5.68±2.78	0.0	11.0
Personal hygiene	52	52.0	48	48.0	4.65±1.35	2.0	8.0
Clothing	63	63.0	37	37.0	3.88±1.13	1.0	6.0
Sleep	5	5.0	95	95.0	1.89±1.11	0.0	5.0
Social skills of a child with autism	66	<b>66.0</b>	34	34.0	6.57±2.21	2.0	14.0
Attention and focus skills	2	2.0	98	<b>98.0</b>	3.27±1.26	1.0	7.0
Language communication skills for a child with autism	2	2.0	98	<b>98.0</b>	4.19±1.50	1.0	9.0
Motor skills of a child with autism	1	1.0	99	<b>99.0</b>	3.78±1.41	1.0	8.0
<b>Total</b>	0	0.0	100	100.0	38.81±6.28	27.0	53.0



**Figure (6):** Total practice level of the studied caregivers of autistic children (n=100).

**Table (7):** The percentage Of Stress Among Caregivers Of Children With Autism Spectrum Disorders (n=100).

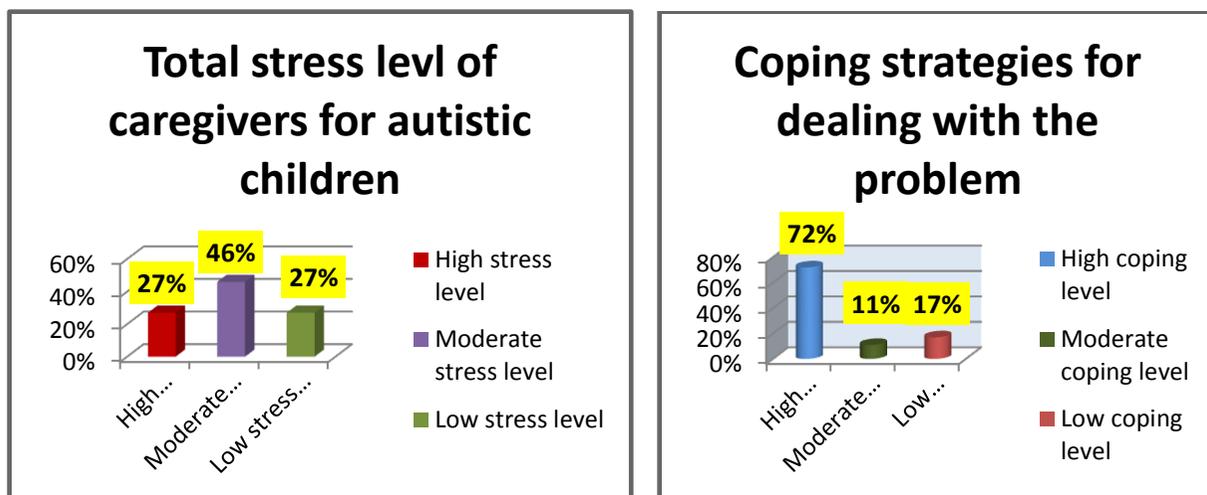
Item	Much		Sometimes		Rarely	
	No	%	No	%	N	%
<b>The domain of stress related to the characteristics of children with autism disorder</b>						
I am sad; as my son has learning difficulties	63	<b>63.0</b>	26	26.0	11	11.0
I am upset; because my son has inappropriate behavior	45	45.0	29	29.0	26	26.0
I am sad; because my son is isolated from his peers	29	29.0	44	44.0	27	27.0
I am upset; because my son has aggressive behavior toward others	44	44.0	38	38.0	18	18.0
I get nervous; from my son's repetitive movements	35	35.0	36	36.0	29	29.0
I am upset; because my son is not able to communicate with others	62	62.0	38	38.0	0	0.0
I'm nervous; because my son has excessive nervousness	36	36.0	35	35.0	29	29.0
<b>The field of pressures related to support &amp; services</b>						
I grieve for; not being able to fulfill my son's financial needs	26	26.0	38	38.0	36	36.0
I am frustrated by; the lack of community support	20	20.0	45	45.0	35	35.0
I am saddened; by the lack of available information about autistic children	45	45.0	44	44.0	11	11.0
I am saddened by; the lack of counseling programs for children with autism	35	35.0	27	27.0	38	38.0
It annoys me; that society does not understand the parents' pressures on autistic children	35	35.0	18	18.0	47	47.0
It saddens me; that specific centers and institutions that take care of autistic children	44	44.0	20	20.0	36	36.0
<b>The field of stress related to the personal and psychological side, I am worried from.....</b>						
taking my child for a picnic because it spoils my enjoyment	20	20.0	35	35.0	45	45.0
that there is no point in caring for and following up on my autistic child	11	11.0	26	26.0	63	63.0
the future of my autistic child	27	27.0	37	37.0	36	36.0
I fail to take care of my child	44	44.0	36	36.0	20	20.0
The lifestyle of my autistic child	17	17.0	54	<b>54.0</b>	29	29.0
the collapse of my dreams and ambitions because of my autistic child children	18	18.0	47	47.0	35	35.0
My child's children abilities are limited that he cannot perform the tasks of daily life	36	36.0	53	53.0	11	11.0
isolate from others	26	26.0	20	20.0	54	54.0
my autistic child	18	18.0	0	0.0	82	<b>82.0</b>
unable to take responsibility for my autistic child	11	11.0	27	27.0	62	62.0
<b>The field of stress related to family and social aspects, I am sad from .....</b>						
reluctant to marry into our family because of my autistic child	11	11.0	53	53.0	36	36.0
my family suffers socially because of the presence of my autistic child	44	44.0	20	20.0	36	36.0
The Other looks make when I go out with my autistic child	26	26.0	54	<b>54.0</b>	20	20.0
The others away from my family because of my autistic child	29	29.0	35	35.0	36	36.0
many questions about my autistic child's condition	18	18.0	29	29.0	53	53.0
my children's angry behavior	27	27.0	29	29.0	44	44.0
bear the burden on my children beyond their capacity because of my autistic child	11	11.0	27	27.0	62	62.0
give up so many essentials because of the needs of my autistic child	17	17.0	45	45.0	38	38.0
ashamed to receive guests at my house because of my autistic child	36	36.0	10	10.0	54	54.0

**Table (8):** The Studied Caregivers' Coping Strategies with Their Autistic Children (n=100). 2202 Out Patient's Unit's

Item	Much		Sometimes		Rarely	
	No	%	No	%	N	%
<b>Coping strategies for dealing with the problem</b>						
strive to improve the social and economic level of my family	54	54.0	11	11.0	35	35.0
Overcome all obstacles that stand in the way of psychological and social adjustment for my autistic son	62	62.0	18	18.0	20	20.0
Although there are crises in my life, I do not place them on the happiness and needs of my autistic son	55	55.0	27	27.0	18	18.0
find it fun to play with my autistic son	64	64.0	9	9.0	27	27.0
dedicate part of my time to taking care of my autistic son without tiring or getting tired	44	44.0	20	20.0	36	36.0
understand my children the nature and symptoms of their autistic brother and how to deal with it	63	63.0	18	18.0	19	19.0
accept my son's disability and live with it	45	45.0	11	11.0	44	<b>44.0</b>
control my anger when dealing with my son's inappropriate behavior and understand and correct it	47	47.0	35	35.0	18	18.0
understand the nature, symptoms, and behaviors of my autistic son and deal with them	64	64.0	36	36.0	0	0.0
go about my daily life activities and achieve my current goals with ease	56	56.0	36	36.0	8	8.0
More than prayer, which adds psychological comfort and strengthens my resolve to face the problem of my autistic son	54	54.0	20	20.0	26	26.0
More than praying and asking for forgiveness, I pray to God to solve the problem of my autistic child	54	54.0	18	18.0	28	28.0
Helping my autistic son to make eye contact and understand speech	72	72.0	9	9.0	19	19.0
help my autistic son understand and carry out orders from others	54	54.0	20	20.0	26	26.0
Helping my autistic son to increase social interaction with others	65	65.0	17	17.0	18	18.0
Helping my autistic son understand emotional expressions	55	55.0	27	27.0	18	18.0
help my autistic son imitate our positive behaviors	63	63.0	20	20.0	17	17.0
help my autistic son to play with others and make friends	45	45.0	45	<b>45.0</b>	10	10.0
Helping my autistic son break routine and stereotyped behaviors	74	<b>74.0</b>	26	26.0	0	0.0

**Table (9):** Distribution Of Studied Caregivers' Stress And Coping Strategies With Their Autistic Children (n=100).

Items	Mean $\pm$ SD	High		Moderate		Low	
		N	%	N	%	N	%
Stress-related to the characteristics of children with autism disorder	12.26 $\pm$ 3.62	44	<b>44.0</b>	36	36.0	20	20.0
Pressures related to support services	11.98 $\pm$ 3.14	35	35.0	36	36.0	29	29.0
Stress-related to the personal and psychological side	22.09 $\pm$ 3.84	18	18.0	28	28.0	54	<b>54.0</b>
Stress-related to family and social aspects	19.60 $\pm$ 3.66	18	18.0	46	<b>46.0</b>	36	36.0
<b>Total stress level</b>	65.93 $\pm$ 10.67	27	27.0	46	46.0	27	27.0
Total Coping strategies for dealing with the problem	45.03 $\pm$ 8.06	72	72.0	11	11.0	17	17.0



**Figure (7):** Total stress level of caregivers for autistic children (n=100). **Figure (8):** Coping strategies for dealing with the problem

**Table (10):** Relation Between Demographic Characteristics And Total Knowledge. (n=100) 2202 Out Patient's Unit's

Item		Satisfactory		Unsatisfactory		X <sup>2</sup>	P value
		No	%	No	%		
<b>Age</b>							
From 20 to less than 30 years	36	5	5.0	31	31.0	4.75	0.191
From 30 to less than 40 years	40	4	4.0	36	36.0		
From 40 to less than 50 years	21	0	0.0	21	21.0		
50 years o& more	3	1	1.0	2	2.0		
<b>Gender</b>						.529	0.467
Male	30	4	4.0	26	26.0		
Female	70	6	6.0	64	64.0		
<b>Residence</b>						.505	0.477
Rural	40	4	4.0	36	36.0		
Urban	60	6	6.0	54	54.0		
<b>Educational level</b>						7.315	0.120
Not read and write	10	2	2.0	8	8.0		
Basic education	40	3	3.0	37	37.0		
Secondary/or technical	30	1	1.0	29	29.0		
University education	10	1	1.0	9	9.0		
Postgraduate education	10	3	3.0	7	7.0		
<b>Marital status</b>						1.990	0.049*
Married	80	8	8.0	72	72.0		
Divorced	20	2	2.0	18	18.0		
<b>Fathers' job</b>						.463	0.496
Private	60	5	5.0	55	55.0		
Government	40	5	5.0	35	35.0		
<b>Mothers' job</b>						2.25	0.323
Private	20	3	3.0	17	17.0		
Government	30	1	1.0	29	29.0		
Housewife	50	6	6.0	44	44.0		

\* Statistically significant at p≤0.05

\*\* Highly statistically significant at p≤0.01

**Table (11):** Relation Between Demographic Characteristics And Total Practices. (n=100) 2202 Out Patient's Unit's

Item	Total practices	t-test	P value
<b>Age</b> from 20 to less than 30 years From 30 to less than 40 years From 40 to less than 50 years from 50 years & more	36.90±6.46	57.082	0.000**
<b>Gender</b> Male Female	37.11±6.26	59.203	0.000**
<b>Residence</b> Rural Urban	37.21±6.40	58.087	0.000**
<b>Educational level</b> Not read and write Basic education Secondary/or technical education University education Postgraduate education	36.01±6.56	54.850	0.000**
<b>Marital status</b> Married Divorced	37.61±6.28	59.284	0.000**
<b>Fathers' job</b> Private Government	37.41±6.31	57.104	0.000**
<b>Mothers' job</b> Private Government Housewife	36.51±6.39	61.230	0.000**

\* Statistically significant at  $p \leq 0.05$ \*\* Highly statistical significant at  $p \leq 0.01$ **Table (12):** Relation Between Demographic Characteristics And Caregivers' Total Stress Level. (n=100) Out Patient's Unit's

Item	High-stress level		Moderate stress level		Low-stress level		X <sup>2</sup>	P value	
	No	%	No	%	N	%			
<b>Age</b> From 20 to less than 30 years From 30 to less than 40 years From 40 to less than 50 years 50 years & r more	36 40 21 3	9 10 6 2	9.0 10.0 6.0 2.0	16 19 11 0	16.0 19.0 11.0 0.0	11 11 4 1	11.0 11.0 4.0 1.0	4.193	0.651
<b>Gender</b> Male Female	30 70	7 20	7.0 20.0	13 33	13.0 33.0	10 17	10.0 17.0	.916	0.632
<b>Residence</b> Rural Urban	40 60	11 16	11.0 16.0	18 28	18.0 28.0	11 16	11.0 16.0	.027	0.987
<b>Educational level</b> Not read and write Basic education Secondary/or technical education University education Postgraduate education	10 40 30 10 10	3 11 10 2 1	3.0 11.0 10.0 2.0 1.0	4 19 14 4 5	4.0 19.0 14.0 4.0 5.0	3 10 6 4 4	3.0 10.0 6.0 4.0 4.0	3.837	0.872
<b>Marital status</b> Married Divorced	80 20	21 6	21.0 6.0	36 10	36.0 10.0	23 4	23.0 4.0	.624	0.732
<b>Fathers' job</b> Private Government	60 40	16 11	16.0 11.0	26 20	26.0 20.0	18 9	18.0 9.0	.738	0.691
<b>Mothers' job</b> Private Government Housewife	20 30 50	6 8 13	6.0 8.0 13.0	8 14 24	8.0 14.0 24.0	6 8 13	6.0 8.0 13.0	.376	0.984

\* Statisti House wife cally significant at  $p \leq 0.05$ \*\* Highly statistical significant at  $p \leq 0.01$

**Table (13):** Relation Between Demographic Characteristics and Caregivers' Total Coping Strategies Level For Dealing With The Problem. (n=100)

Item	High coping level		Moderate coping level		Low coping level		X <sup>2</sup>	P value	
	No	%	No	%	N	%			
<b>Age</b>									
From 20 to less than 30 years	36	27	27.0	3	3.0	6	6.0	1.611	0.952
From 30 to less than 40 years	40	29	29.0	5	5.0	6	6.0		
From 40 to less than 50 years	21	14	14.0	3	3.0	4	4.0		
50 years o& more	3	2	2.0	0	0.0	1	1.0		
<b>Gender</b>									
Male	30	23	23.0	2	2.0	5	5.0	.864	0.649
Female	70	49	49.0	9	9.0	12	12.0		
<b>Residence</b>									
Rural	40	29	29.0	4	4.0	7	7.0	.073	0.964
Urban	60	43	43.0	7	7.0	10	10.0		
<b>Educational level</b>									
Not read and write	10	8	8.0	0	0.0	2	2.0	3.096	0.928
Basic education	40	28	28.0	4	4.0	8	8.0		
Secondary/or technical education	30	21	21.0	5	5.0	4	4.0		
Education	10	7	7.0	1	1.0	2	2.0		
Postgraduate education	10	8	8.0	1	1.0	1	1.0		
<b>Marital status</b>									
Married	80	58	58.0	9	9.0	13	13.0	.169	0.919
Divorced	20	14	14.0	2	2.0	4	4.0		
<b>Fathers' job</b>									
Private	60	43	43.0	6	6.0	11	11.0	.296	0.863
Government	40	29	29.0	5	5.0	6	6.0		
<b>Mothers' job</b>									
Private	20	15	15.0	1	1.0	4	4.0	1.54	0.818
Government	30	20	20.0	4	4.0	6	6.0		
Housewife	50	37	37.0	6	6.0	7	7.0		

\* Statistically significant at p≤0.05

\*\* Highly statistical significant at p≤0.01

**Table (14):** Correlation Between Domains of Stress Level. (n=100) 2202 Out Patient's Unit's

		Stress-related to the characteristics of children with autism disorder	Pressures related to support services	Stress-related to the personal and psychological side
Stress-related to the characteristics of children with autism disorder	r			
	p			
Pressures related to support services	r	.246		
	p	0.014*		
Stress-related to the personal and psychological side	r	.227	.450	
	p	0.023*	0.000**	
Stress-related to family and social aspects	r	.502	.275	.713
	p	0.000**	0.006**	0.000**

\* Statistically significant at p≤0.05

\*\* Highly statistical significant at p≤0.01

**Table (15):** Correlation Between Total Knowledge Level, Total Practice Level, Total Stress Level, And Total Coping Level. (n=100)

		Total knowledge level	Total practice level	Total stress level
Total knowledge level	r			
	p			
Total practice level	r	.493		
	p	0.000**		
Total stress level	r	.185	.582	
	p	0.066	0.000**	
Total coping level	r	.101	.645	.466
	p	0.315	0.000**	0.000**

\* Statistically significant at p≤0.05

\*\* Highly statistical significant at p≤0.01

## Discussion

The prevalence of ASD worldwide has risen steadily. The reasons for the dramatic increase in ASD prevalence are currently being debated in the literature, which postulates several causes, including a rising awareness among caregivers, improvements in the diagnostic criteria based on the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), and advances in services that drive accurate diagnoses. Higher levels of stress and other negative psychological outcomes are a few of the challenges faced by caregivers of children with developmental disabilities (*Nik Adib et al., 2019*).

Regarding caregivers' knowledge regarding autism, the current study represented that, the majority of the studied caregivers had correct answers regarding autistic children using gestures and signs instead of talking. While, more than three-quarters of them had incorrect answers regarding autistic children's unexplained emotions (anger-joy-crying). This study was supported by *Asiri et al., (2023)* in their recent study titled "Assessment of parental knowledge, awareness, and perception about autism spectrum disorders in Aseer region, southwestern Saudi Arabia", mentioned that most of the studied parents had correct answers regarding autistic children use body language and symbolic finger gestures to communicate. Contrariwise, this result was in disagreement with *Abu El-Soud et al., (2020)* who conducted a study titled "Assessment of knowledge, strains, and coping of the family caregivers having autistic children" stated that less than half of the studied caregivers had incorrect answers regarding autistic children had inappropriate and unexplained emotions. From the researcher's point of view, this could be related, to the characteristics of children with autism show many problems with social and communication deficiency, loss of the ability to speak, inability to respond while communicating with others, and slowness in interpreting social signals such as approval and rejection, which hinders the communication process. Social interaction with others results in difficulty

understanding and interacting socially (*Knight et al., 2013, Jimenez et al., 2014*).

Regarding the total knowledge level of caregivers with autistic children, the present study revealed that the majority of the studied caregivers had unsatisfactory knowledge levels. While a minority of them had a satisfactory knowledge level regarding autism. This finding was in agreement with *Alkazam & Al-Dujaili, (2022)* in their recent study titled "Assessment knowledge and attitude among caregivers of children with autism spectrum disorders" which reported that more than half of the studied caregivers had unsatisfactory knowledge levels regarding autism. Contrariwise, this study was in disagreement with *Hasan, (2020)* who carried out a study titled "Assessment of family knowledge toward their children with autism spectrum disorder at al-Hilla City, Iraq" represented that less than half of the studied families had unsatisfactory knowledge level regarding autism. From the researcher's point of view, this might be related to the majority of the sample having basic education, secondary and not reading and writing all this leads to a lack of knowledge.

Concerning practice among caregivers of children with autism spectrum disorders regarding nutrition, the constant study reported that less than one-quarter of studied caregivers trained the child to feed himself/herself and less than half of them sometimes encouraged the child to express himself/herself and his/her feelings about eating. While, less than two-thirds of them weren't train the child to use a cup to drink, and to use a straw to drink liquids. This result was supported by *Montiel-Nava et al., (2022)* in their recent study titled "Implementing the WHO caregivers' skills training program with caregivers of autistic children via Telehealth in rural communities" mentioned that a minority of the studied caregivers educated their autistic children to feed themselves and allow their autistic children to express their feelings.

Contrariwise, this finding disagreed with *Hermaszewska & Sin, (2021)* who carried out a study entitled "End-user

perspectives on the development of an online intervention for parents of children on the autism spectrum” revealed that more than half of the studied parents trained their autistic children to eat and drink alone by using spoons, cups and shalimo. From the researcher's point of view, the majority of the sample had basic education, and secondary and did not read and write, more than half of the mothers were housewives and nearly two-thirds of the fathers had private jobs so this might be related to that, caregivers were too busy in providing service.

Regarding practice among caregivers of children with autism spectrum disorders regarding defecation, the present study represented that, less than one-third of the studied caregivers keep the child to defecate after every meal and regularly instruct the child to signal when he needs to go to the bathroom While less than two-thirds of them did not have good observe and know when the baby bee. This study was in the same line with *Ito & Inoue, (2022)* in their recent study titled “Parent-mediated toilet training for a child with autism spectrum disorder through Teleconsultation” which reported that less than half of the studied parents were training their autistic children to go to the toilet regularly alone, help their children to go out from the toilet and how express their need to defecate. Contrariwise, this result disagreed with *Dabney et al., (2023)* in their recent study titled "Caregiver implemented toilet training procedures for children with autism spectrum disorder" which stated that more than half of the studied caregivers know when and times of their children's defecation.

Concerning practice among caregivers of children with autism spectrum disorders regarding personal hygiene, the current study revealed that more than two-thirds, of them sometimes trained the child to clean his/her nose and more than one-quarter of them didn't train the child to wash his/her hands before and after eating. This finding was supported by *Stanford et al., (2020)* who conducted a study titled "Above and Beyond": The Perceptions of Mothers of Children with Autism about 'Good Practice' by Professionals and Services" represented

that more than three-quarters of the studied mothers were trained their autistic children to keep their bodies and clothes clean and use paper tissues for clean eyes and nose. This study disagreed with *Kouo, (2020)* who carried out a study entitled “Seeking patient- and family-centered care: The experiences of families of children with an autism spectrum disorder” which mentioned that more than half of the studied families were educated their autistic children to wash their hands.

Regarding practice among caregivers of children with autism spectrum disorders regarding clothing, the present study reported that more than half of the studied caregivers were helping their children to wear their shoes alone and sometimes train their children to undress. This result was similar to *Iadarola et al., (2020)* who conducted a study titled "Mind the gap: An intervention to support caregivers with a new autism spectrum disorder diagnosis is feasible and acceptable" stated that the majority of the studied caregivers trained their children to wear and take off their shoes and undress their clothes. Contrariwise, this study was dissimilar to *Ten Hoopen et al., (2019)* who conducted a study entitled "Children with an autism spectrum disorder and their Caregivers: Capturing Health-related and Care-related Quality of Life" mentioned that less than half of the studied caregivers were educate their autistic children to undress their clothes.

Regarding practice among caregivers of children with autism spectrum disorders regarding sleeping, the constant study represented that, less than one-quarter of the studied caregivers were read stories that were not frightening and age-appropriate, about five minutes before bedtime every day, and more than half of them were sometimes reduced touching him/her and depend on talking to him/her in a soft, clear voice. This finding was in agreement with *Fleury & Chaxiong, (2020)* who conducted a study entitled "Brief Report: Caregiver Perceptions of autism practices" which mentioned that the majority of the studied caregivers talk with their children softly and compassionately. Contrariwise, this result was in disagreement with *Bradshaw et al., (2022)* in their recent

study titled "Advances in supporting parents in interventions for autism spectrum disorder" which stated that less than two-thirds of the studied parents were reading stories and weren't change children position during sleeping suddenly.

Regarding caregivers' practice of children with autism spectrum disorders regarding social skills, the present study reported that less than one-quarter of the studied caregivers trained the child to respond to meeting eyes when talking to others and less than three-quarters of them were sometimes involved in the child in one of the clubs or nurseries. While more than half of them weren't accompanied by their child on birthdays and similar occasions. This study was supported by **Rios & Benson (2020)** who carried out a study entitled "Exploring Caregiver Perspectives of Social and Motor Skills in Children with autism spectrum disorder and the Impact on Participation" represented that more than half of the studied caregivers sometimes take their children in clubs and nurseries. This finding disagreed with **Park et al., (2022)** in their recent study titled "Parent-assisted social skills training for children with autism spectrum disorder: peers for preschoolers" which stated that more than two-thirds of the studied caregivers teach their children how can contact eyes with others while he agreed with our study as he detects the majority of them engage their autistic children in family events.

Concerning the practice of caregivers of children with autism spectrum disorders regarding the attention and Focus skills of the child with autism, the current study revealed that a minority of the studied caregivers were constantly grabbing the child's attention, such as fumbling and calling the child with a smile. More than two-thirds of them were sometimes constantly grabbing the child's attention, such as fumbling and calling the child with a smile, and more than half of them hadn't reached the child's gaze for a certain thing for a long time. This finding was in the same line with **Gunderson et al. (2022)** in their recent study titled "Caregiver Fidelity and Effectiveness Mediate Compliance Training for Children with Autism Spectrum

Disorder" who reported that less than half of the caregivers studied sometimes accommodated children's attention while he disagreed with our study as he reported that more than half They were reaching for their children's gazes. This study disagreed with **Nie et al. (2021)** in their study "Immersive Computer Caregiver-Child Interaction System for Young Children with Autism Spectrum Disorder" which represented that less than a third of the caregivers sometimes constantly grab their children's attention.

Concerning the practice of caregivers of children with autism spectrum disorders regarding language communication skills the present study reported that less than one-quarter of the studied caregivers used one word or short sentences when talking to the child and more than half of them sometimes used pictures of everyday objects to facilitate communication with the child. This finding was supported by **Ganz et al., (2023)** in their recent study titled "Effects of a parent-mediated multimodal communication intervention on communicative behaviors in children with autism spectrum disorder" which mentioned that most of the studied parents sometimes used pictures of objects. Contrariwise, this result was in disagreement with **Amato, (2019)** who carried out a study entitled "Family and the process of communicative development in children with ASD (Autism spectrum disorders)," which revealed that more than three-fifth of the studied families used simple words and short sentences when talking to the child and used pictures to train and improve their language and communication skills.

Concerning practice among caregivers of children with autism spectrum disorders regarding motor skills of a child with autism, the constant study represented that, less than one-quarter of the studied caregivers trained the child in some simple exercise such as running and jumping, more than half of them sometimes trained the child to hold a pencil and crayon. While two-thirds of them didn't encourage the child to participate in various motor activities. This study was similar to **Rios & Benson (2020)** who carried out a study entitled "Exploring caregiver perspectives of social and motor

skills in children with autism spectrum disorder and the impact on participation" stated that more than one-third of the studied caregivers were engaged their children in some exercises as running. Contrariwise, this finding was similar to *Zaid, (2020)* who conducted a study titled "A cross-sectional survey based on the perception of caregivers to communication barriers with autism spectrum disorder children" and reported that more than half of the studied caregivers were occasionally trained their children to hold a pencil while the same researcher was disagreement with our study as he reports that he encourages them to engage in various motor activities.

Regarding the level of practice among caregivers of children with autism spectrum disorders regarding dimensions of practices, the present study revealed that two-thirds of the studied caregivers had adequate practice levels regarding the social skills of a child with autism. While, majority of them had inadequate practice levels regarding attention and focus skills, language communication skills for a child with autism, and motor skills of a child with autism.

This result was in line with *Higgins et al., (2022)* in their recent study titled "Adaptation of parents raising a child with ASD; The role of positive perceptions, coping, self-efficacy, and social support" stated that more than two-thirds of the studied parents had incompetent practice level regarding caring of autistic children; and was supported by *Tork, (2020)* who carried out a study entitled "Education Program for Mothers of Children with Autism Spectrum Disorder: Mothers and Child Outcomes" represented that more than half of the studied mothers had adequate practice level regarding social skills provided to their autistic children and agreement with *Fleury & Chaxiong, (2020)* who conducted a study entitled "Brief report: Caregiver perceptions of autism practices" revealed that more than two-thirds of the studied caregivers had incompetent practice levels.

The researcher's point of view toward all of the studied caregivers had inadequate practice levels regarding caring for their children with autism, this could be related to that more than half of the studied caregivers didn't attend courses related to

autism, the majority of studied caregivers had unsatisfactory knowledge level the major of the sample had basic education, secondary and not read and write all this lead to lack of knowledge. Contrariwise, this result was in disagreement with *Iadarola et al., (2020)* who conducted a study titled "Mind the gap: An intervention to support caregivers with a new autism spectrum disorder diagnosis is feasible and acceptable" mentioned that more than half of the studied caregivers had competent practice level regarding caring their autistic children and *Iadarola et al., (2020)* provide **The reason** for this is due to the training of fathers and mothers of children with autism spectrum disorder on how and methods of intervention with their children. Twelve meetings were held between trainers and caregivers over eighteen weeks. The trainers presented methods of intervention in homes and various community sites. *Iadarola et al., (2020)*

Regarding the stress among caregivers of children with autism spectrum disorders, the current study indicated that more than half of the caregivers included in the study reported that they feel very sad because their child has a learning difficulty, and they sometimes feel that their child's lifestyle Autism makes them sad, and the looks of other children make them sad when they go out with their autistic son.

This study was supported by *Gabra & Farouk, (2021)* in their study titled "Comparison of caregivers' characteristics, stigma, and disease burden of children with autism spectrum disorder and attention deficit disorder in Egypt" stated that more than half of the studied caregivers sometimes feel sad because of their autistic son; and was agreed with *Aslam et al., (2022)* in their recent study titled "Psychological health of primary caregivers: An association of primary caregiver's stress and depression with behavior severity of autistic children" mentioned that more than two thirds of the studied caregivers were feel sad related to their children learning and communication difficulty and facing difficulty when get their children out from home; and agreed with *Shamash & Hinman, (2021)* in their study titled "Assessing caregiver stress and coping at time of autism

spectrum disorder diagnosis” reported that most of the studied caregivers reported that they feel sad that their children differ from other children.

Regarding caregivers' coping strategies with their autistic children, the constant study found that less than three-quarters of the studied caregivers were helping their autistic son break routine and stereotyped behaviors, nearly half of them sometimes help their autistic son play with others and make friends and rarely accept their son's disability and live with it. This result was in agreement with *ALBusaidi et al., (2022)* in their recent study titled "Quality of life and coping strategies used by parents of children with autism spectrum disorder in Oman" which reported that more than half of the studied parents try hard to create a non-stereotypical environment to avoid repeating the behavior. Contrariwise, this study was in disagreement with *Wang et al., (2022)* in their recent study titled "Coping, social support, and family quality of life for caregivers of individuals with autism: Meta-analytic structural equation modeling" represented that more than two-thirds of the studied caregivers' help their autistic children to engage in play, make friends and accept and accommodate their children condition.

Regarding caregivers' stress and coping strategies with their autistic children, the present study revealed that less than half of the studied caregivers had high-stress levels regarding stress related to the characteristics of children with autism disorder, and nearly one-third of them had low pressure related to supported service and low stress level regarding stress related to the personal and psychological side respectively.

This finding was on the same line with *Zainal et al., (2021)* in their study titled "The domain of challenges and coping mechanisms amongst caregivers of autistic children" which stated that more than one-third of the studied caregivers had high stress levels regarding their autistic children's life and condition. Contrariwise, this result disagreed with *Ahmed et al., (2021)* in their study titled "Effect of parent training regarding coping strategies on reducing

stress among parent of children with autism spectrum disorder" represented that more than half of the studied parents had low stress regarding social relations, aspects, while the same researcher was an agreement with our study as his sample had low stress regarding emotional and psychological stress regarding their autistic children.

Concerning the total stress level of caregivers for autistic children, the constant study reported that, less than half of the studied caregivers had moderate stress levels and more than one-quarter of them had high and low stress levels. This study was supported by *Mostafa, (2019)* who conducted a study entitled "Stress and coping strategies among parents of children with autism spectrum disorder" which revealed that about one-third of the studied caregivers had moderate to low stress levels. Contrariwise, this finding was in disagreement with *Ishtiaq et al., (2020)* who conducted a study titled "Stress and Coping Strategies for Parenting Children with Hearing Impairment and Autism", and mentioned that less than two-thirds of the studied caregivers had high stress levels regarding their autistic children. The researcher's point of view is that the majority of the studied caregivers had unsatisfactory knowledge levels regarding autism and how to deal with their autistic child.

Concerning coping strategies for dealing with the problem, the present study found that, less than three-quarters of studied caregivers had high coping levels and less than one-quarter of them had low coping levels and had moderate coping levels with the problem. This result was similar to *Abu El-Soud et al., (2020)* who carried out a study titled "Assessment of knowledge, strains, and coping of the family caregivers having autistic children" stated that most of the studied family caregivers had high coping levels; and on the same line with *Nik Adib et al., (2019)* who conducted a study entitled "Perceived stress among caregivers of children with autism spectrum disorder" reported that minority of the studied caregivers had low and moderate stress level.

Regarding the relation between demographic characteristics and total knowledge, the current study revealed that

there was a statistically significant relation between caregivers' total knowledge level and their marital status, there was no statistically significant with age, gender, residence, educational level, fathers' job, and mothers' job. This finding was in agreement with *Alkazam & Al-Dujaili, (2022)* in their recent study titled "Assessment knowledge and attitude among caregivers of children with autism spectrum disorders" which mentioned that there was no statistically significant difference between the studied caregivers' knowledge and their age, gender, residence, education and caregivers job. Contrariwise, this result was in disagreement with *Asiri et al., (2023)* in their recent study titled "Assessment of parental knowledge, awareness, and perception about autism spectrum disorders in Aseer region, southwestern Saudi Arabia" which stated that there was no statistical significant difference between the studied parents' total knowledge and their marital status.

Concerning the relation between demographic characteristics and caregivers' total stress level, the present study reported that, there was no statistically significant relation between caregivers' total stress level and all their demographic characteristics. This study was in the same line with *Alibekova et al., (2022)* in their recent study titled "Stress, anxiety, and depression in Parents of Children with autism spectrum disorders in Kazakhstan" which revealed that there was no statistically significant difference between the studied parents' stress level and their socio-demographic characteristics. Contrariwise, this finding disagreed with *Nik Adib et al., (2019)* who conducted a study titled "Perceived stress among caregivers of children with autism spectrum disorder" which mentioned that there was a highly statistically significant difference between the studied caregivers' total stress level and their educational level and age and *Nik Adib et al., (2019)* gives his "reason" for this is that caregivers cannot face their problems and they have accumulated greatly.

Regarding the relation between demographic characteristics and caregivers' total coping strategies level for dealing with the problem, the constant study found that

there was no statistically significant relation between caregivers' coping strategies level and all their demographic characteristics.

This result was similar to *Ahmed et al., (2021)* in their study titled "Effect of parent training regarding coping strategies on reducing stress among parents of children with autism spectrum disorder" which reported that there was no statistically significant difference between the studied parents' coping level and their age, gender, marital status, residence and job. Contrariwise, this study was dissimilar to *Higgins et al., (2022)* in their recent study titled "Adaptation of parents raising a child with ASD; The role of positive perceptions, coping, self-efficacy, and social support" revealed that there was a statistically significant difference between the studied parents' coping level and their gender and educational level and *Higgins et al., (2022)* give his "reason" because of the quality of life and precise efficiency in adaptation. From the researcher's point of view, this is because most of the studied caregivers had unsatisfactory knowledge levels and all the sample had inadequate practice.

Concerning the correlation between domains of stress level, the current study indicated that, there was a strong positive correlation between stress related to family and social aspects, support services and stress related to the characteristics of children with autism disorder, pressures related to support services and stress related to the personal and psychological side and there was positive correlation between stress related to the characteristics of children with autism disorder, pressures related to support services and stress related to the personal and psychological side.

This finding was on the same line with *Lancastle et al., (2022)* in their recent study titled "The stress can be unbearable, but the good times are like finding gold": A phase one modeling survey to inform the development of a self-help positive reappraisal coping intervention for caregivers of those with autism spectrum disorder" stated that there was a positive correlation between social stress, social support, psychological and personal stress and total stress regarding autistic children

condition. Contrariwise, this result disagreed with **Alibekova et al., (2022)** in their recent study titled "Stress, anxiety, and depression in parents of children with autism spectrum disorders in Kazakhstan" which found that there was a negative correlation between social stress, psychological stress and total stress among the studied parents with autism children.

Regarding the correlation between total knowledge level, total practice level, total stress level, and total coping level, the current study revealed that there was a strong positive correlation between total practice and total knowledge, total stress level, and total coping level. There was a negative correlation between total knowledge level, total stress level, and total coping level. This study was supported by **Montiel-Nava et al., (2022)** in their recent study titled "Implementing the WHO Caregivers' Skills Training Program with Caregivers of autistic children via Telehealth in Rural Communities" stated that there was a positive correlation between total Knowledge and Total Practice of the studied caregivers; and this finding was on the same line with **Ahmed et al., (2021)** in their study titled "Effect of parent training regarding coping strategies on reducing stress among parent of children with autism spectrum disorder" mentioned that there was a strong positive correlation between total stress level and total coping strategies among studied parents.

### **Conclusion**

**After the conduct of the current study, it was found the following:**

The majority of studied caregivers were female. Nearly two-thirds of the sample is from urban areas. half of them were housewives and more than half of them had basic education. More than half of them had children with a mild degree of autism while the others were moderate and severe. The majority of the caregivers had information about spectrum disorders from the mentioned sources of information available, nearly two-thirds of them don't attend courses related to autism

The knowledge and practices of the studied caregivers regarding caring for their

children with autism were incompetent. nearly half of the sample suffered from moderate stress levels, the other had nearly three-quarter of them had high coping strategies for dealing with the problem. there was no statistically significant relation between caregivers' total knowledge level with all demographic characteristics except marital status. There was no statistically significant relation between caregivers' total stress level, caregivers' coping strategies level, and their demographic characteristics.

### **Recommendation**

From this study, the investigator provides the decision maker in all health sectors in our society recommendation to:

- 1- Providing training programs for caregivers of children with autism, helps them to be able to deal in the best way with their children.
- 2- Development of social support networks that can play a protective role in caregivers' mental health and the well-being of the entire family.
- 3- The necessity of Providing health education, guidance, and counseling programs is essential to improve caregivers' knowledge, skills, and coping patterns toward the care of their children with autism to help them reduce their degree of psychological stress.
- 4- The necessity of Providing Holding scientific seminars that give mothers of children with autism spectrum disorder insight into the concept of the disorder, its causes, and how to deal with it.
- 5- The necessity of Providing financial, social, and moral support to caregivers of children with autism spectrum disorder through the family and those around them.
- 6- The necessity of having an autism spectrum disorder specialist in every hospital to assist caregivers of children with autism spectrum disorder.
- 7- The necessity of conducting awareness and sensitization campaigns to inform community members about pressures, their sources, their negative effects, and how to confront them

### **Further recommendation:-**

- 1) Since autism spectrum disorder is a lifelong condition, further research to assess and implement the health care needs of those children in school age and adult.
- 2) Further researches are needed to identify the most common family problems in the community with appropriate interventions.
- 3) Future research could replicate and expand on study methods to include more participants and details about the results of education programs on autistic children and their families.

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