

Stress and Coping Patterns among Parents Having Children with Autism

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Abstract:

Background: Parents of children with autism may suffer high levels of stress, resulting in disruption in lifestyle and relationship, deprivation of human need, and failure to act in ways to eliminate the cause of the distress. Moreover, family stress can contribute to unfavorable prognosis. This study was **conducted to** assess the stress and coping patterns among parents having children with autism using a cross-sectional analytic **design** at the Child Clinic of the El-Abassia Governmental Hospital for mental health, and the Special Needs Health Care Center in Ain Shams University. It included a convenience **sample** of 80 parents and their autistic children. **The tools** used to collect the data were the Child's Medical and Developmental Data Sheet, the Parental Coping Strategy Inventory, and the Parenting Stress Index. Data collection was from October 2009 to April 2010. The **study findings** showed that 77.5% of the parents were coping with the situation, and 96.3% had high total stress. Coping increased with increasing birth order ($p=0.002$), and mother education ($p=0.03$). Stress score had negative significant correlations with child IQ ($r=-0.479$), and father education ($r=-0.231$), and a positive correlation with family size ($r=0.230$) and the time lapse between symptoms and diagnosis ($r=0.284$). **Recommendations:** it is recommended to include the assessment of parents' stress level as a part of the screening and assessment of children with ASD. Formation of support groups must be encouraged, with the nurses exerting more effort in this.

Keywords: Autism, Parental Stress, Coping

Introduction:

Autism spectrum disorders (ASD) refers to 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 (**DSM-IV, 2000**). The condition affects approximately 1 in every 110 children, and is growing at a rate of 10% to 17% per year (**Centers for Disease Control and Prevention [CDC], 2010**). Studies from Egypt and the Middle

East on autism are scarce (**Afifi, 2005**). A recent study in three Arab Countries (Egypt, Saudi Arabia, Jordan) included 60 autistic children examined cognitive and behavioral problems between boys and girls (**Amr et al, 2011**). Another study in Egypt investigated the possible risk factors of autism in 100 patients with autism in the pediatric hospital at Ain Shams University identified high maternal age and advanced paternal age at birth, as well as positive family history as significant factors, in addition to postnatal factors (**El-Baz, Ismael &Nour Eldin, 2011**).

Nonetheless, no real population-based study was conducted to determine the true prevalence in Egypt or Arab countries. However, anecdotal reports suggest an increase in the prevalence of autism in these countries (**Hussein, Taha & Almanasef, 2011**).

Although there are many other developmental disorders, which also present parents with ongoing grief, autism is unique in several ways. Firstly, unlike many other developmental disabilities this disorder has no clear biological marker. This ambiguity makes it extremely difficult for parents to accept the child's condition. Secondly, because it is characterized by problems of social interaction, such as forming attachments and showing affection, parents of children with autism are often denied some of the fundamental rewards of parenthood. As a result, autism has been considered as one of the most complex and intractable developmental disorders with which families may have to cope (**Gupta & Singhal, 2005**). Added to these are the permanency of the condition, the lack of acceptance of behavior by family members and society, the low levels of support provided, and the economic burden of raising a child with ASD (**Jarbrink, Fombonne & Knapp, 2003; Sharpe & Baker, 2007**).

A major goal in working with the family of a child with ASD is to support family coping and promote optimum family functioning throughout the child's life. The nurse can help families cope with stress by providing anticipatory guidance, providing emotional support, assisting the family in assessing and identifying specific stressors, aiding the family in developing coping mechanisms and problem solving strategies, and working collaboratively with parents

so that they become empowered in the process of coping (**Wong et al., 2003**).

Aim of the study:

The aim of the study was to assess the stress and coping patterns among parents having children with autism.

Research Question:

- Is there a relationship between parenting having autistic child and stress indicators?
- What are the coping patterns used by parents to adjust with these problems?

Subjects and methods:

Research Design and Setting

This study was conducted at the Child Clinic of the El-Abassia Governmental Hospital for mental health, and the Special Needs Health Care Center in Ain Shams University, using a cross-sectional analytic design.

Sample:

A convenience sample of 80 parents and their children who have diagnosed with autism were selected from the above mentioned two settings. For children the inclusion criteria were being definitely diagnosed as autistic, age 4-17 years; chronic physical illness except epilepsy children and those with Attention Deficit Hyperactivity Disorders were excluded. For parents, the inclusion criteria were living in the same household, and providing care to the autistic child.

Data collection tools:

Three tools were used to collect the study data.

- **Child's Medical and Developmental Data Sheet:** developed by **Hussein (2003)** to assess the developmental, medical, psychological and family history of child with autism. It includes the socio-demographic characteristics of the autistic child and the parents, and the child's developmental and medical history.
- **Parental Coping Strategy Inventory (PCSI):** constructed by **Yeh (2001)** to evaluate the coping strategies of parents having autistic children. The Arabic version of this scale was developed by **Mahmoud (2007)** and was utilized in this study. It includes 64 items grouped into 12 subscales: learning, struggling, interaction with patient, interaction with spouse, interaction with healthy sibling, emotional support, information support, actual support, maintaining stability, maintaining an optimistic state of mind, searching for spiritual meaning, and increasing religious activities. The items are rated on 4- point Likert scale with response options "strongly agree", "agree", "disagree", and "strongly disagree", scored 4, 3, 2, and 1, respectively. For each area, the scores of the items were summed-up and the total divided by the number of the items. These scores were converted into a percent score. The subject was considered as agreeing to use coping if the percent score was 60% or more, and not agreeing upon use if less than 60%. The reliability of the tool was tested through measuring its internal consistency. It demonstrated a good level of reliability with Cronbach alpha coefficient 0.75.
- **Parenting Stress Index (PSI):**

developed by **Abidin (1983)** to assess the negative outcomes associated with the parent-child relationship, and to identify the related sources of the stress. It was translated into Arabic by **Elbeblawy (1988)**. It is a 120-item self-report grouped into three main groups of stressors, namely child-related, parent-related, and life stressors-related. Responses are on a 5-point Likert scale "strongly agree", "agree", "uncertain", "disagree", and "strongly disagree," scored 5, 4, 3, 2, and 1 respectively. For each domain and subscale, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score. The subject was considered highly stressed if the percent score was 60% or more and with low stress if less than 60%. The reliability of the tool was tested through measuring its internal consistency. It demonstrated a good level of reliability with Cronbach alpha coefficient 0.88.

Pilot study:

A pilot study was carried out eight parents and their children, constituting about 10 percent of the total study sample to test the feasibility and clarity of the tools, and to know the time needed for filling the tools. Minor changes were done as revealed from the pilot study by omission and remodifications of certain items. The tool was then finalized. The pilot sample was not included in the main study.

Fieldwork:

Once permission was granted to proceed with the study, the researchers visited the study settings and met with

the parents having autistic children who fulfilled the inclusion and exclusion criteria. The purpose of the study was explained to the eligible parent who was invited to participate in the study. Upon agreement, the researchers started the interview individually using the data collection tools. The questionnaire was read, explained, and choices were recorded by the researchers. The time consumed to fill out the full questionnaire sheet ranged from 30 to 45 minutes. Data collection lasted for seven months, from the beginning of October 2009 to the end of April 2010.

Administrative and Ethical Considerations:

Permissions to conduct the study were obtained from pertinent authorities. The researchers visited these two settings, met with the directors, explained to them the study aim and procedures, and asked for their cooperation. The researcher explained the study aim in a simple and clear manner to be understood by eligible parents. A verbal consent was obtained by each participant who was informed about the rights to withdraw from the study at any time without giving any reason. Data were considered confidential and not be used outside this study without parent's approval.

Statistical design:

Data entry and statistical analysis were done using SPSS 14.0 statistical software package. Cronbach alpha coefficient was calculated to assess the reliability of the tools through testing their internal consistency. Pearson correlation analysis was used for assessment of the inter-relationships among quantitative variables, and Spearman rank correlation for ranked ones. To assess the relationship between scores of coping and stress as dependent factors, on the one hand,

and various child and parents factors, as independent factors, on the other hand, multiple stepwise backward regression analysis was used, and analysis of variance for the full regression models were done. Statistical significance was considered at p -value <0.05 .

Results:

Table (1) shows that the age of the studied children ranged from 4 to 13 years with mean 6.9 ± 2.6 years, mostly of third or higher birth rank (46.3%). The majority of them were males (71.3%), living in urban areas (93.8%). More than half of the children had no education (52.5%), and had their IQ less than 60 (53.8%).

Concerning parents' demographic characteristics, **table (2)** demonstrates that more than half of the fathers and mothers had high education, 53.8% and 57.5%, respectively. About two thirds of the fathers (60.0%) were employees, while the majority of the mothers (82.5%) were housewives. The family size was more than four persons in 88.7% of the families, and the number of siblings was mostly more than two (52.5%).

Concerning the sources of stress among parents, **table (3)** demonstrates that 93.8% had total child-related stress, 77.5% had total parent-related stress, and 18.8% had life stressors. The highest child-related stressor was acceptability (97.5%) followed by demandingness (92.5%), whereas the lowest was distractability and hyperactivity (57.5%). As for parent-related stressors, social isolation was the (76.3%), followed by parental health (72.5%), whereas the sense of competence was the lowest (28.8%). Overall, almost all parents had high total stress (96.3%).

In total, the coping strategy of increasing religious activities was agreed upon by all parents (100.0%) as presented in **table (4)**. Other strategies used by the great majority of parents were maintaining an optimistic state of mind (98.8%), interaction with diseased child (92.5%), and searching for spiritual meaning (91.3%). At the other extreme, the least used strategy was actual support (1.3%). In total, 77.5% of the parents were coping with the situation.

Table (5) shows no statistically significant correlation between the scores of parents' coping strategies and stress. Meanwhile, the stress score had negative statistically significant correlations with child IQ ($r=-0.479$), and father education ($r=-0.231$), and a positive correlation with family size ($r=0.230$). As for parents' coping score, it had statistically significant positive correlations family size ($r=0.222$), number of siblings ($r=0.246$), and birth order ($r=0.329$).

Table (6) displays the best fitting multiple linear regression model for parents' stress score. It indicates that the statistically significant independent predictors of parents' stress score are child's sex and IQ. It is evident that the stress score increases with child male sex and lower IQ. The model explains 28% of the stress score as shown by the value of r-square. Other child and parents' characteristics had no influence on the stress score. The table also describes the best fitting multiple linear regression model for parents' coping score. It shows that the statistically significant independent predictors of parents' coping score are child's birth order and mother's education. It is noticed that the coping score increases with increasing child birth order and higher mother education. The model explains 19% of

the coping score as shown by the value of r-square. Other child and parents' characteristics had no influence on the coping score of parents.

Discussion:

The present study assessed the stress among caregivers of the autistic children. Almost all of them experienced a high level of stress. This high percentage is expected given the tiring child characteristics as adaptability, demandingness, and distraction. Added to these are the behavioral problems, as well as financial needs, and social isolation, which can contribute to low parental wellbeing and elevated parental stress. In agreement with this finding, **Koydemir and Tosun (2009)** stated that all mothers of children with autism experienced stress, and some of them stated that they also felt exhaustion beside stress.

The stresses related to the child were the most common among parents in the present study, whereas those related to life were the least. Among the stresses related to the child, the problem of acceptability of parents to their children was the most commonly reported source of stress, followed by child demandingness. This might be due to the fact that the autistic child physical, intellectual, and emotional characteristics and the nature of the disability constitute a barrier between against the expectation of the parents toward their child. In congruence with this, **Allen (2003)**, who conducting a study in California, found that the autistic children fail to match the expectations and hopes of the parents, leading to stress due to the problem of acceptability. The second ranking stressor was also similar to the current study, which is the stress due to autistic child placing many demands upon the parents, reported by 98% of the parents.

As for parent-related stress, the current study identified social isolation as the most common source of such stress, followed by parental health, and restrictions of parental role. Meanwhile, the sense of competence was the least frequently reported stress. These present study results are certainly due to the fact that bringing up a child with autism prevents the parents from having the opportunity to engage in social and recreational activities, which leads to isolation from peers and relatives. Added to this is the feeling of embarrassment or from child's behavior. However, **Allen (2003)** had a different ranking of the parent-related stressors, where the deterioration in parent health was in the first rank, while the role restriction came second.

According to the present study, parental stress related to the life stress domain was very low, affecting less than one-fifth of parents. In congruence with this, **Osborne and Reed (2009)**, who conducting a study in United Kingdom, reported an even lower percentage of life stress (8.9%) among autistic children parents. The everyday care, instead of being a normal part of the everyday life of a family with a little child, has a completely different dimension when the child is mentally retarded with a long term dependency impact on its care. Therefore, one of the basic challenges for autism children parents is to manage the child's problems effectively and to cope with them while playing this role together with all the other demands of everyday life (**Karasavvidis et al., 2011**).

Concerning the factors influencing parental stress, the present study revealed that the stress score was negatively correlated to child's IQ, and father education, and positively

correlated to family size. However, multivariate analysis showed that only child's sex and IQ were independent predictors of the stress score; with the stress score increasing with child male sex and lower IQ. The findings are in congruence with previous studies which demonstrated that certain child characteristics play an important role in experiencing parental stress such as the gender of the child (**Hastings et al, 2005**), the degree of disability and IQ (**Khamis, 2007; Plant and Sanders, 2007; Azar and Badr, 2009**), and the form and kind of the disorder (**Karasavvidis et al., 2011**). Meanwhile, other studies reported a significant relation between stress and mother rather than father education as in the present study (**Plant and Sanders, 2007; McConkey et al., 2008**).

The second objective of the present study was to assess the coping strategies used by parents of autistic children. The results revealed that increasing religious activities was the most frequent coping strategies followed by maintaining an optimistic state of mind, interaction with diseased child, searching for spiritual meaning. At the other extreme, coping through actual support was the least frequently used. This indicates that religion is a particularly important coping strategy for these parents who may consider their caring role as a sacred duty. They may believe in that if Allah gave any condition to their children, He also gives them the strength and resources to cope with it. Hence, they resort to praying and performing religious rituals that provide them with strength to pursue their role.

These foregoing present study findings are in agreement with **Gray (2006)** who found that more parents coped through their religious faith and

other emotion-focused strategies and fewer ones coped through reliance on service providers, family support, social withdrawal and individualism. On the same line, **Morse (2011)** demonstrated an increasing trend of the use of spiritual support among for parents of autistic children as they grow older. Nevertheless, **Tarakeshwar and Pargament (2001)** emphasized that the use of negative religious coping (e.g., passive waiting for God to solve the problem) by parents of children with autism was associated with increases in depressive affect, poor religious outcome, and greater anxiety.

Maintaining an optimistic state of mind as a coping method was used by almost all parents, and came second to increasing religious practice. This is quite expected as optimism is a reflection of good faith and counting on God's will to solve problems. In congruence with this present study finding, **Baker, Blacher and Olsson(2005)** mentioned that an optimistic explanatory style might help reduce the effect of stress of having child with chronic illness on one's emotions, cognitions, relationships, and immune system.

Another important coping strategy revealed among parents in the present study was the interaction with the child, as reported by a great majority of them, while interaction with the spouse was much less. This could be related to the nature of this disability where children cannot care for themselves so that the parents tend to overprotect. This goes on line with **Mahmoud (2007)**, who conducting a study in Egypt; similarly found that the highest mean scores for interaction with child were related to "confronting the difficulty together" and "sharing concerns and feelings." As regards

interaction with spouse, about half of the present study respondents used it. This indicates that the presence of child with autism in the family may increase parents' cohesion. However, due to the masculine society, men are less willing to help in home chores, and may spend more time outside home to secure financial needs. Similar findings were reported by **Chou (2000)**, who conducting a study on caregiver burden in Taiwan, showed that higher levels of interaction with family members can decrease caregivers' burden.

According to the present study findings, parents' coping through interaction with healthy siblings was more used than interaction with spouse. This may be due to that parents tend to view their child as fragile, vulnerable, and different; so they engage in overprotective parenting. This goes in line with **Lin, Tsai and Chang (2008)** who conducting a study in Taiwan, showed that parents explained the autistic child's condition to healthy siblings, and expected them to help in care. Therefore, they ask the child's healthy siblings to assume the responsibility of caring during their life as outlined by **Chehrazi (2002)**.

Concerning the need of learning as a coping strategy, the present study revealed that a high percentage of the parents have agreed upon its use. This is quite plausible given the nature of the condition which does not give early manifestations for diagnosis, and the lack of information given the relatively low incidence of this disease. These ambiguities would certainly raise the levels of parents' stress and concerns about the future of their children. Thus, parent education is effective in obtaining positive outcomes for both parents and children (**Brookman-Fraze, 2004; Tonge et al., 2006**).

Getting support is an important coping mechanism that may help the parents of autistic children. However, parents in the present study relied less on this type of coping. This indicates the importance of social solidarity and support received from family members and friends in reducing the impact of illness on the family. In congruence with this, **Abd El- Aziz (2002)** and **Twoy, Connolly and Novak (2007)** found that parents of children with autism sought out close friends to share their concerns and difficulties. As for the actual support as a coping method, the current study revealed that it was the least agreed upon, which reflects a high level of pre-occupation of the parents with their children at the expense of their own health and wellbeing. On the contrary, **Twoy et al., (2007)**, conducting a study in California, reported that about 80% of the participants were acquiring and accepting help from community agencies and programs.

The need for maintaining stability turned to be an important coping method used by parents in the present study. The majority of the sample agreed upon avoiding drinking substances and alcohol, smoking and taking medication. This may be due to the high religiosity and spirituality in oriental communities, besides the fear for of addiction. On the same, line, **Lin et al (2008)** stated that the self-change adjustments were made by parents of autistic children as coping strategies.

The present study revealed a number of factors related to parents' coping. These included mother education, family size, number of siblings and sisters, and child birth order. However, in multiple regression analysis, the significant independent predictors of parents' coping score were only the child's birth order and

mother's education; both were positive predictors of the coping score. The effect of mother education can be explained by their higher probability to get to information and support resources. As for the child birth order, it might be attributed to the fact that when the first born child is affected, the feelings of disappointment are higher, along with the lack of parents' experience. This may lead to family dysfunction, which is a major factor in stress and coping as clarified by **Matthew (2006)**.

Lastly, the present study could not reveal any significant relation between stress and coping. This might be due to that when parents are highly educated and become more stressed about the progress of their child condition and their future, this enables them to react positively by learning and discovering methods to face the problem and seek help and support from health care professionals and other families. The finding is in agreement with **Jones and Passey (2005)** and **Stuart and McGrew (2009)** who failed to find significant correlations between burden and both problem-focused and emotional-approach coping strategies. On the same line, **Twoy et al. (2007)**, who conducting a study on coping strategies used by parents of children with autism in California, showed that the parents who are under severe strain and stress due to caring for child with autism had highly adaptive nature.

Conclusion and recommendations:

It is concluded that almost all parents of autistic children have high levels of stress, but many of them are coping with the situation. The mostly used coping strategies are those of increasing religious activities, maintaining an optimistic state of mind, interaction with the diseased

child, and searching for spiritual meaning, while the use of actual support is the least used. Having an autistic child who is male and having low IQ predicts a higher level of parent stress, whereas mothers with higher education and having an autistic child with higher birth order are better coping.

Based on the study results it is recommended that: parents' stress level be evaluated as a part of the screening and assessment of children with ASD, with interventions

based on the results of assessment to be developed and implemented. There is an urgent need to encourage the formation of support groups to help parents connect with other parents with ASD children who have similar problems and concerns. Nurses should exert more effort to support parents of children with ASD through counseling clinics. Research is proposed to investigate the effectiveness of nursing interventions aimed at enhancing the use of coping strategies among parents with ASD children.

Table (1): Demographic characteristics of children in the study sample (n=80)

Item	Frequency	Percent
Age (years):		
<6	26	32.5
6-7	30	37.5
8+	24	30.0
Range	4-13	
mean±SD	6.9±2.6	
Sex:		
Male	57	71.3
Female	23	28.8
Birth order:		
1	8	10.0
2	35	43.8
3+	37	46.3
Residence:		
Rural	5	6.3
Urban	75	93.8
Child education:		
None	42	52.5
Nursery	28	35.0
Primary	10	12.5
IQ:		
<60	43	53.8
60-	21	26.3
70+	16	20.0
Range	25-92	
mean±SD	59.4-11.3	

Table (2): Demographic characteristics of parents in the study sample (n=80)

Item	Frequency	Percent
Father education:		
Illiterate/read write	11	11.8
Intermediate	26	32.5
High	43	53.8
Mother education:		
Illiterate/read write	9	11.3
Intermediate	25	31.3
High	46	57.5
Father job:		
Manual worker	32	40.0
Employee	48	60.0
Mother job:		
Housewife	66	82.5
Working	14	17.5
Family size:		
<4	9	11.3
4+	71	88.7
No. of siblings:		
0	8	10.0
1	30	37.5
2+	42	52.5

Table (3): Sources of stress among parents of autistic children in the study sample (n=80)

Stress	Frequency	Percent
Child-related stress:		
Acceptability	78	97.5
Demandingness	74	92.5
Reinforcing parents	65	81.3
Mood	61	76.3
Adaptability	57	71.3
Distractability/hyperactivity	46	57.5
Total child-related stress	75	93.8
Parent-related stress:		
Social isolation	61	76.3
Parental health	58	72.5
Restrictions of roles	53	66.3
Depression symptoms	52	65.0
Disturbed relationship with spouse	43	53.8
Attachment	38	47.5
Sense of competence	23	28.8
Total parent-related stress	62	77.5
Life-related stress:		
Life stressors	15	18.8
Total stress:		
High	77	96.3
Low	3	3.7

Table (4): Coping strategies among parents of children in the study sample (n=80)

Coping strategies	Agree	
	No.	%
Learning	66	82.5
Struggling	66	82.5
Interaction with diseased child	74	92.5
Interaction with spouse	37	46.3
Interaction with healthy siblings	52	65.0
Emotional support	60	75.0
Information support	49	61.3
Actual support	1	1.3
Maintaining stability	68	85.0
Optimism	79	98.8
Spirituality	73	91.3
Increasing religious practices	80	100.0
Total coping:		
Yes	62	77.5
No	18	22.5

Table (5): Correlation between coping strategies and stress scores and various child and parents characteristics

Child and parents characteristics	Pearson correlation coefficient	
	Stress score	Coping score
Coping score	-0.123	
Child age	0.183	0.107
IQ	-0.479**	0.019
Family size	0.230*	0.222*
No. of siblings	0.148	0.246*
Birth order	-0.091	0.329**
Father education@	-0.231*	0.096
Mother education@	-0.206	0.181

(@) Spearman rank correlation

(*) Statistically significant at $p < 0.05$ (**) Statistically significant at $p < 0.01$

Table (6): Best fitting multiple linear regression model for stress score

Item	Un standardized Coefficients		Standardized Coefficients	t-test	p-value
	B	Std. Error			
Stress score					
Constant	433.282	22.906		18.915	<0.001
Sex (reference: male)	-17.353	7.626	-.230	2.275	.026
IQ	-1.627	.303	-.542	5.368	<0.001
<i>r-square=0.28</i>					
<i>Model ANOVA: F=14.78, p<0.001</i>					
<i>Variables excluded by model (non-significant): child age, birth order, parents education, family size, number of siblings, coping score</i>					
Coping score					
Constant	63.419	1.794		35.341	<0.001
Child birth order	1.470	.413	.370	3.557	.001
Mother education (reference: illiterate)	1.296	.518	.260	2.499	.015
<i>r-square=0.19</i>					
<i>Model ANOVA: F=8.67, p<0.001</i>					
<i>Variables excluded by model (non-significant): child age, sex, father education, family size, number of siblings, IQ, stress score</i>					

References:

- **Abd El-Aziz E.M. (2002):** problems and coping methods among family caregivers of mentally ill patient. Unpublished Master Thesis, Faculty of Nursing, Cairo University.
- **Abidin R.R. (1983):** Parenting stress index –Manual Charlottesville Virginia: Pediatric Psychology Press.
- **Affi M.M. (2005):** Mental health publications from the Arab world cited in Pub Med, 1987-2002. Eastern Mediterranean Health Journal; 1(3):319–28.
- **Allen C. (2003):** The relationship of stress, coping and other factors in parents of children with autism. ProQuest information and learning company.
- **Amr M., Raddad D., El-Mehesh F., Mahmoud E. & El-Gilany A. (2011):** Sex differences in Arab children with Autism spectrum disorders. Journal of Research in autism spectrum disorders; 5(4):1343–1350.
- **Azar M. & Badr K.L. (2009):** Predictors of coping in parents of children with an Intellectual Disability: Comparison between Lebanese Mothers and Fathers. Journal of Pediatric Nursing, Article in Press, Available Online, Elsevier Database. Retrived on March 4, 2011.
- **Baker B.L., Blacher J. & Olsson M.B. (2005):** Preschool children with and without developmental delay: Behavior problems, Parents' optimism and well-being. Journal of Intellectual Disability Research; 49: 575-590.
- **Brookman-Fraze L. (2004):** Using parenr/clinician partnerships in parenr education programs for children with autism. Journal of Positive Behavior Interventions; 6: 195-213.
- **Centers of Disease Control and Prevention [CDC], (2010):** Source for credible health information. Available at: <http://www.cdc.gov/ncbddd/autism/index.html>. Accessed on Sept 23, 2011
- **Chehrazi A. (2002):** Healthy adaptation in parents of children with autism: implications of personality and resilience. Dissertation Abstracts International: Section B: The Sciences and Engineering; 63: 1017.
- **Chou K.R. (2000):** Caregiver burden: A concept analysis. Journal of

pediatric Nursing; 15(6) 398-407.

- **DSM-IV (2000):** Diagnostic and Statistical Manual of Mental Disorders, (2000). Text revision. (4th edition), Washington DC: American Psychiatric Association.p.70.
- **El-Baz F, Ismael NA & Nour Eldin SM. (2011):** Risk factors for autism: An Egyptian study. Egyptian Journal of Medical Human Genetics; 12(1):31-38.
- **Elbeblawy V. (1988):** Parenting stress index. Egypt: Angelo library. Assistant Professor of Psychiatry, Faculty of education, Banha University.
- **Gray D.E. (2006):** Coping over time: The parents of children with autism. Journal of Intellectual Disability Research; 50: 970-976.
- **Gupta A. & Singhal N. (2005):** psychosocial support for families of children with autism. Asia Pacific Disability Rehabilitation Journal; 16(2).
- **Hastings R.P., Kovshoff H., Ward N.J., Espinosa F.D., Brown T. & Remington B. (2005):** Systems analysis of stress and positive perceptions in mothers and fathers of pre-school children with autism. Journal of Autism and Developmental Disorders; 35: 635-644.
- **Hussein A.R. (2003):** Hyperactivity syndrome in school boys in Sharkia Governorate: The diagnosis and prevalence. Unpublished Doctorate Thesis, Faculty of Medicine Zagazig University.
- **Hussein H., Taha GRA. & Almanasef A. (2011):** Characteristics of autism spectrum disorders in a sample of Egyptian and Saudi patients: Transcultural cross sectional study. Child Adolesc Psychiatry Ment Health; 5: 34.
- **Jarbrink K., Fombonne E. & Knapp M. (2003):** Measuring the parental, service and cost impacts of children with autistic spectrum disorder: A pilot study. Journal of Autism and Developmental Disorders; 33: 395-402.
- **Jones J. & Passey J. (2005):** Family Adaptation, Coping and Resources: Parents Of Children with Developmental Disabilities and Behavior Problems. Journal on Developmental Disabilities; 11: 31-46.
- **Karasavvidis S., Avgerinou C., Lianou E., Priftis D., Lianou A. & Siamaga E. (2011):** Mental Retardation and Parenting Stress. International Journal of Caring Sciences; 4(Issue 1): 21-31.
- **Khamis V. (2007):** Psychological distress among parents of children with mental retardation in the United Arab Emirates. Social Science and Medicine; 64: 850-857.
- **Koydemir S. & Tosun U. (2009):** Impact of autistic children on the lives of mothers. Procedia Social and Behavioral Sciences; 1: 2534-2540.
- **Lin C.R., Tsai Y.F. & Chang H.L. (2008):** Coping mechanisms of parents of children recently diagnosed with autism in Taiwan: A qualitative study. Journal of Clinical Nursing; 17: 2733-2740.
- **Mahmoud S.F. (2007):** Psychosocial problems and adjustment among parents of children with attention deficit hyperactivity disorders Unpublished M.SC. Thesis, Faculty of Nursing, Zagazig University
- **Matthew A.J. (2006):** "Family functioning and coping behaviors in parents of children with autism". Masters Theses and Doctoral Dissertations, Paper 54.Retrieved on October 5, 2011. From <http://commons.emich.edu/theses/54>.
- **McConkey R., Truesdale-Kennedy M., Chang Y.M. & Jarrah S. (2008):** The impact on mothers of bringing up a child with intellectual disabilities: A cross-cultural study. International Journal of Nursing Studies; 45: 65-74.
- **Morse R.S. (2011):** Smith-Magenis syndrome: maladaptive behaviors and effects on parent stress, coping, and family adjustment. A Dissertation Submitted to the Graduate Faculty of George Mason University for Partial

Fulfillment of The Requirements for the Degree of Doctor of Philosophy, Psychology.

- **Osborne L.A. & Reed P.H. (2009):** The relationship between parent stress and behavior problems of children with autistic spectrum disorders, *Exceptional children* publisher: Council for Exceptional children; 76(issue 1). Available at: <http://www.freepatentonline.com/>. Accessed on May 7, 2011
- **Plant K.M., & Sanders M.R. (2007):** Predictors of care-giver stress in families of Pre School aged children with developmental disabilities. *Journal of Intellectual Disability Research*; 51 (2): 109-124.
- **Sharpe D.L. & Baker D.L. (2007):** Financial issues associated with having a child with autism. *Journal of Family Economic Issues*; 28: 247-264.
- **Stuart M. & McGrew J.H. (2009):** Caregiver burden after receiving a diagnosis of an autism spectrum disorder. *Research in Autism Spectrum Disorders*; 3(issue 1):86 - 97.
- **Tarakeshwar N. & Pargament K. (2001):** Religious coping in families of children with autism. *Focus on Autism and Other Developmental Disabilities*; 16(4): 247-260.
- **Tonge B., Brereton A., Kiomall M., Mackinnon A., King N. & Rinehart N. (2006):** Effects on Parental Mental Health of an Education and Skills Training Program for Parents of Young Children with Autism: A randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*; 45: 561-569.
- **Twoy R., Connolly P.M. & Novak J.M. (2007):** Coping strategies used by parents of children with autism. *Journal of the American Academy of Nurse Practitioners*; 19: 251-260.
- **Wong D.L., Hockenberry M.J., Wilson D., Winkelstein M. L. & Kline N.E. (2003):** Wong's nursing care of infants and children. 7th ed., London: Mosby Co., p. 920.
- **Yeh C.H. (2001):** Parental coping strategy inventory (PCSI). *Journal of Advanced Nursing*; 36(1): 78-88

