

PSYCHOLOGICAL WELL-BEING AND LIFE SATISFACTION OF PARENTS WITH AUTISTIC CHILDREN

Noor Muhammad^{*}, Fatema-Tu-Zohra Binte Zaman and Rahama Rahim

Abstract

The current study was considered to inspect the psychological well-being and life satisfaction of parents of autistic children. Two questionnaires: 1) Psychological Well-Being Scale (SPWB), 2) Life Satisfaction Scale, and a Personal Information Form (PIF) were used to collect data from a sample of 200 parents (100 parents with autistic children and 100 parents without autistic children) of Dhaka city. Six objectives were formulated to examine in this study. The obtained data were analyzed by applying descriptive and inferential statistical techniques. Results suggested that parents of autistic children expressed lower psychological well-being and life satisfaction than that of parents without autistic children. Results also revealed that psychological well-being and life satisfaction of mothers of autistic children were found lower than their fathers. Based on the outcomes of independent sample t-tests and analysis of variance, it can be said that psychological well-being and life satisfaction of parents of autistic children do not differ according to education and family income. The implications of the findings have been interpreted in light of previous studies.

Key words: *education, family income, life satisfaction, psychological well-being*

Introduction

Autism is denoted as developmental disorder categorized by problems with social communication and contact, and by weakened as well as repetitive behavior (Marcelli, 2003). The symptoms of autism are typically noticed by the parents in the earliest two or three years of their child's life (Landa, 2008) that's why it is often denoted to as early infantile autism, childhood autism, or Kanner's autism. These signs often develop gradually (Stefanatos, 2008). According to the Diagnostic and Statistical Manual of Mental Disorder (DSM- 5), the basic features of Autism Spectrum Disorder (ASD) are the manifestation of noticeably diminished development in social interaction and communication and a markedly limited repertoire of activity and interests. Demonstrations of the disorder differ significantly based on the developmental level and chronological age of the person. Autism is basically caused by a product of hereditary

Department of Psychology, Jagannath University, Dhaka-1100, Bangladesh

^{*} Corresponding author: Noor Muhammad, Email: noor4salaphy@yahoo.com

and environmental elements (Chaste, 155 & Leboyer, 2012). Specific in factions during the prenatal period such as rubella as well as valproic acid, alcohol or cocaine use during this period may act as risk factors (Ornoy *et al.*, 2015). Though other proposed environmental reasons, for example the vaccine hypotheses, but that have been disproven (Rutter 2005). Autism influences on information processing functions in the brain by changing the connection between nerve cells and their synapses, but how this occurs is not properly identified (Levy *et al.*, 2009). The proportion of autism has been increased day by day across the world. In the 2000s, the number of people affected by autism was estimated at 1–2 per 1,000 people worldwide (Newschaffer, *et al.*, 2007). In the developed countries, about 1.5% of children are diagnosed with ASD as of 2017 (Lyll *et al.*, 2017) a more than doubling from 1 in 150 in 2000 in the United States.

In Bangladesh, autism has also been recognized as a burden of diseases and it has been hypothesized that the amount is high and mostly, is overlooked for instance, in rural areas. In the center for Neurodevelopment & Autism in Children, at Bangabandhu Sheikh Mujib Medical University statistics reveal that urban children perusing more treatment for autism problems compared to rural children. A national-level study in Bangladesh during 2013 used community health worker, has found the prevalence of ASD; the survey reported a frequency of 1.5/1000 (30/1000 in Dhaka city and 7/10,000 in countryside area) within 7200 populations (Akhter, *et al.*, 2018).

Psychological well-being is a subjective and multidimensional construct (Wissing & VanEeden, 2002) incorporating positive mental health (Edwards, 2005) and negative features of life. It is an integration of emotional regulation, personality traits, identity, and life experience (Helson & Srivastava, 2001) which may soar with age, education, extraversion, and consciousness as well as diminish with neuroticism (Keyes *et al.*, 2002). However, life satisfaction is the dominant aspect of human welfare (Haybron 2006) measures of well-being, assessed in terms of mood (Qurashi *et al.*, 2015), contentment with affiliation with others and with attained aims (Bailey *et al.*, 2007), self-concepts (Gonzalo –Silvestre & Ubillos –Landa, 2016), and self-perceived ability to adjust with everyday life (de Waure *et al.*, 2015). Eventually, personal mental health greatly influences life satisfaction paralleled with other components (Lombardo *et al.*, 2018).

Although a great deal of investigations from various aspects have been conducted on autistic children but their parents get less attention in this area. Due to having offspring's developmental complications parents of children with autism spectrum disorders (ASD) confront several obstacles (Myers *et al.*, 2009 & Totsika *et al.*, 2011). (Nikmat, 2008) found that parents with autistic children have high dominance of stress and psychological disturbances. For instance, the presence of obsessive-compulsive symptoms, depression,

anxiety and paranoia (Ouet *et al.*, 2010) were observed. In a similar vein, in respect of psychological well-being and coping style, (Laiet *et al.*, 2015) reported that parents of children having ASD exhibited more anxiety symptoms (i.e. negative parental self-concepts, poorer satisfaction with the parent-child relationship, and experiences of problematic child behaviors), greater depression indicators, and more recurrent practice of active avoidance coping, than parents of normally growing children. However, parental stress and the child's depressive feelings not only powerfully influenced their psychological health but also have a secondary association with limited caregiver social actions (Cramm *et al.*, 2011).

Additionally, (Abbeduto *et al.*, 2003) investigated that mothers' psychological well-being particularly, those who have a developmentally disabled child, differs with the nature of the impairment. Moreover, mothers of autistic children are vulnerable to exhibit depression if they accused themselves of the reason or consequence of their child's disorder and 50% of them revealed a higher level of depression compared to 15% to 21% in the control group. Remarkably, the disparity in psychological well-being has also appeared between both the parents (father and mother) of a child with ASD. Nikmat *et al.* (2008) identified that the mother displayed greater impairment in psychological well-being compared to the father. Particularly, a high prevalence of anxiety is appeared in mothers rather than fathers as well as mothers withdraw themselves from the support that contact with other people can offer (Gray & Holden, 1992). Even, parents of children having ASD exhibited poorer functioning of the family as well as family members, they also displayed higher levels of parenting stress and lesser quality of life (Pisula & Porębowicz-Dörsmann, 2017). On the other hand, greater maternal well-being and satisfaction with life were observed in high family income group among parents with children having autism (Falk *et al.*, 2014), in contrary, lower socio-economic status also relevant to the poor mental wellbeing of autistic parents due to their inability to mitigate their children's requirement (Pickard & Ingersoll, 2016). Moreover, higher levels of educated parents of children with autism and other disabilities demonstrated more stress (Benson, 2006).

Every member of the family has a dream child concept that influences their attitudes towards the unborn baby. Parents and grandparents want the child to be perfect mentally, emotionally, and physically bright. Parents want to enjoy a happy life with their child or children. All times they are busy rear their children. Although they worked hard, they didn't suffer any psychological crisis due to having normal babies. Normal babies can do something according to social expectations. However, parents do not get normal babies

or dream children always. To rear these babies, they face various troublesome problems that may reduce their happiness level, increase their life stress, depression as well as anxiety level. Results of the many studies suggest that fathers and mothers of the autism babies are suffering more psychological hazards that are harmful for them (Nikmat, 2008; Lai *et al.*,2015).Now-a-days, autism is an important issue in the world. So it is necessary to conduct scientific research to know the psychological health of the parents of autistic children. Although, all the studies have been conducted in Western cultures. No study was conducted in our country even at Eastern countries. So, the present investigator would like to conduct this study in our country to assess parents' psychological well-being and life satisfaction. The main objective of the present study was to investigate the psychological well-being and life satisfaction of parents with autistic children. The specific objectives were to explore:

- RO₁** whether there is any difference in psychological well-being with and without autistic children;
- RO₂** if there is any variance in life satisfaction between parents with and without autistic children;
- RO₃** whether there is any disparity among the various income groups in terms of psychological well-being and life satisfaction of parents with autistic children;
- RO₄** if there is any disparity among the different educational groups in terms of psychological well-being and life satisfaction of parents with autistic children
- RO₅** whether there is any difference in psychological well-being and life satisfaction between mother and fathers of autistic children;
- RO₆** if psychological wellbeing is positively related to life satisfaction.

Material and Methods

Participants

A total of 200 (100 parents with autistic children&100 parents without autistic children) parents were purposively chosen from the various autism canter's (parents with autistic children) in Dhaka city. Further parents without autistic children were also chosen different schools for the present investigation. The father's age range was 25-50 years old and the mother age range was23-45 years old. Few basic parental demographical information i.e. occupation, educational qualification, and family income, etc. were recorded as demographic variables and illustrated through figure 1.

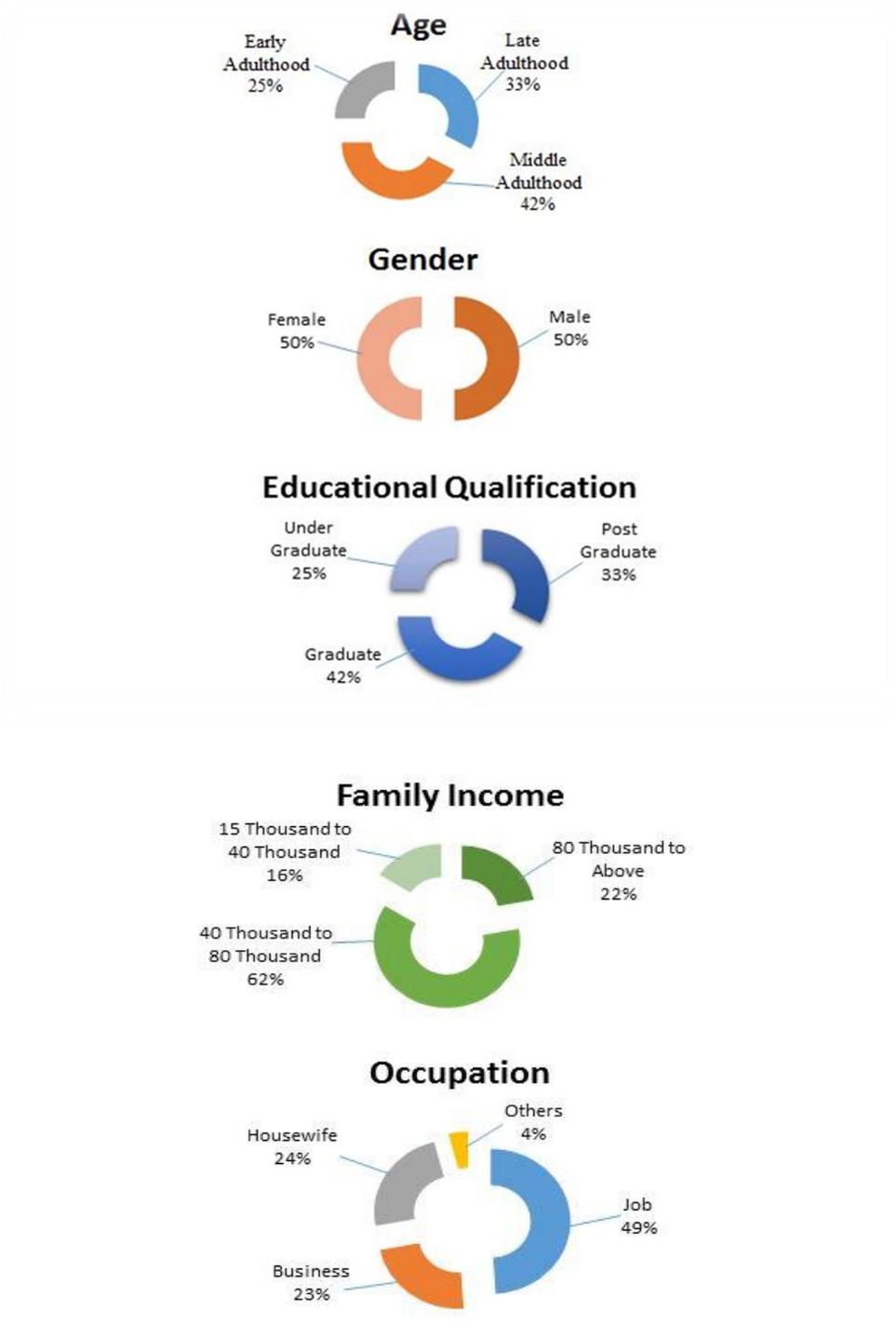


Figure 1 Demographic Profile of the Respondents

Study Area

All the respondents were chosen from the different areas of Dhaka city in Bangladesh.

Study Design

A cross-sectional survey design was followed in current study.

Measuring tools

To measure the psychological well-being and life satisfaction of parents with autistic children the following instruments were administered to the respondents. Two individual instruments and a personal information sheet were used to collect data. They are- 1) Personal Information Form, 2) Psychological Well-Being Scale, and 3) Life Satisfaction Scale

Personal information form

Some personal variables like parental educational qualifications, profession, economical condition, age etc. were recorded as personal information prepared by the researchers.

Psychological Well-Being Scale

The adapted Bangla version instrument was employed on the selected group was the scale of Psychological Well-Being (SPWB) which is a self-report tool and contains six dimensions that evaluate different features of positive functioning (Ryff, 1989b). The scale is consisting of six sub-scales demonstrating the dimensions of self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Each sub-scale comprises 9 items. There are 54 items; among them 28 items are negative items. Items are counted on a 5-point scale ranging from “*strongly agree*” to “*strongly disagree*”. Moreover, Ryff’s scales are positively correlated with previous tools of well-being, such as the Affect Balance Scale (Bradburn, 1969) and the Life Satisfaction Index (Neugarten *et al.*, 1961) and reversely with tools of depression (Zung *et al.*, 1965) such as Depression Scale. Internal consistency (alpha) coefficients for the six scales range from 0.82 to 0.90 (Schmutte & Ryff, 1997).

Life Satisfaction Scale

The adapted Bangla version (Ilyas, 2001) of The Satisfaction with Life Scale (SWLS) (Diener *et al.* 1995) was applied to measure the total judgment of personal life of the participants, designed with 5-items (Diener *et al.*, 1985) having 7-point answer format which ranging from “*strongly disagrees*” to “*strongly agree*”. The overall score fluctuated from 5-35; here the upper score indicated higher life satisfaction. The test-

retest correlation coefficient and an alpha coefficient of this scale were found .82 and .87 respectively (Diener, *et al.*, 1985) for 176 undergraduate students group. Additionally, an alpha coefficient of .83 was observed in a sample of 39 old people (Diener, *et al.*, 1991).

Procedure

To collect data from the respondents, initially, consent was taken from the parents of autistic and normal children. Then the researcher established rapport with them by explaining the aims of the study and confirming the confidentiality of their answers. Afterward, the respondents were firstly requested to fill up the personal information form and then the Bangla versions of the two given scales. Finally, they were thanked to accomplish the tasks sincerely.

Results and Discussion

According to the objectives of the present study, the obtained data were scrutinized using different statistical techniques such as independent sample *t* - test and F test with the help of computer software, called Statistical Package for Social Sciences (SPSS). Results of the mean, standard deviation, *t*-test and One Way ANOVA have been shown in the following tables consecutively.

Table 1. Differences in Parental Psychological Well-being and Life Satisfaction of with and without Autistic Children

Variables	Parents(WA)Parents (WOA)				t	sig
	M ₁	SD ₁	M ₂	SD ₂		
Psychological Well-being	128.89	44.55	164.16	34.37	4.43**	.01
Life Satisfaction	19.26	5.08	23.26	5.70	3.71**	.01

Note: ** indicates t-value is significant at 0.01 level, WA=With Autistic, WOA= Without Autistic

In the above table, the mean scores of psychological well-being of parents with and without autistic children were 128.89 and 164.16 respectively and the mean scores of life satisfaction of parents with and without autistic children were 19.26 and 23.26 respectively. Here, results suggested that psychological well-being and life satisfaction of parents with autistic children are lower than parents without autistic children. Findings further, suggested that, significant differences were observed in parental psychological well- being ($t= 4.43; p<.01$) and life satisfaction ($t= 3.71; p<.01$) of WA and WOA.

Table 2. Differences among Parental Income and Education Level in Terms of Psychological Well-being and Life Satisfaction Scores

Income Group	N	Mean	Std. Deviation	F
Psychological Well-being (Income)				
High	33	138.39	42.03	44.04 3.27* (.04)
Middle	55	145.29	34.58	
Lower	12	174.67		
Life Satisfaction (Income)				
High	33	19.93	5.07	5.98 5.86** (.004)
Middle	55	20.98	3.69	
Lower	12	26.17		
Psychological Well-being (Education Level-Father)				
Post Graduate	7	122.10	40.87	35.89 1.08 (.35)
Graduate	30	123.33	20.46	
Under Graduate	13	128.15		
Life Satisfaction(Education Level-Father)				
Post Graduate	07	18.57	5.62	4.99 .76 (.48)
Graduate	30	17.43	4.27	
Under Graduate	13	19.35		
Psychological Well-being (Education Level-Mother)				
Post Graduate	18	171.33	31.16	4.79(.013)
Graduate	27	179.15	34.56	
Under Graduate	05	125.60	52.86	
Life Satisfaction(Education Level-Mother)				
Post Graduate	18	25.33	3.86	4.97 1.70 (.194)
Graduate	27	24.44	5.43	
Under Graduate	05	25.60		

Note: value in the parenthesis indicates the significance level.

Results reported in Table 2 indicate that mean scores of psychological well-being among different income groups 'parents are 138.39, 145.29 and 174.67 respectively. Further the table represents that mean scores of life satisfaction of parents with different income levels are 19.93, 20.98 and 26.17 respectively. Moreover, undergraduate fathers ($M =$

128.15) and graduate mothers ($M = 179.15$) are more psychologically well than others. In addition, undergraduate fathers ($M = 19.35$) and mothers ($M = 25.60$) are more satisfied with their life comparing others. Table 2 also indicates significant difference in psychological well-being among different income groups parents [$F = 3.27$, $df = (2, 97)$, $p = .04$] were observed. However, the table further indicates that there is significant difference in life satisfaction among different income groups' parents [$F = 5.86$, $df = (2, 97)$, $p = .004$]. Moreover, the result revealed that there is no significant difference in psychological well-being among fathers [$F = 1.08$, $df = (2, 47)$, $p = .35$] and mothers [$F = 4.79$, $df = (2, 47)$, $p = .01$] in terms of different educational groups. Furthermore, no significant difference is seen in life satisfaction of fathers [$F = .76$, $df = (2, 47)$, $p = .475$] and mothers [$F = 1.70$, $df = (2, 47)$, $p = .194$] of autistic child in respect of their educational background.

Table 3. Mean Difference of Parental (Mother and Father) Psychological Well-being and Life Satisfaction with Autistic Children

Variables	Mother	Father	Mother	Father	<i>t</i>
	M_1	<i>SD</i>	M_2	<i>SD</i>	
Psychological Well Being	122.10	170.09	35.53	38.16	6.81**
Life Satisfaction	18.10	24.42	4.88	4.72	6.58**

However, Table 3 indicated that psychological well-being and life satisfaction of mothers of autistic children are poorer than fathers. Findings further, suggested that, significant differences were observed in parental psychological well-being ($t = 6.81$; $p < .01$) and life satisfaction ($t = 6.58$; $p < .01$) with autistic child.

Table 4. Correlation Matrix between psychological well-being and life satisfaction of parents of autistic children

Variables	1	2
Psychological Well-Being	1	-
Life Satisfaction	1	.392**

** Correlation is significant at the 0.01 level (2-tailed)

Simple correlations of each independent variable with dependent variable are displayed in table 4. The outcomes revealed that psychological well-being of the this study is positively correlated with life satisfaction [$r_{(200)} = .392$, $p < .01$].

This study was intended to examine the five research objectives. To measure the variables of the present study two questionnaires were applied to two hundred parents (100 parents with autistic children & 100 parents without autistic children) selected from different areas in Dhaka city. The obtained data were analyzed by applying independent sample t-test, One Way ANOVA and Pearson product moment correlation method.

Our first objective was to see whether there is any difference in psychological well-being between parents with and without autistic children. Outcomes (table 1) suggested that, notable discrepancy were observed in psychological well-being of parents with autistic children and without autistic children where parents with autistic children have lower psychological well-being than parents without autistic child. These findings are in line with the earlier studies (Nikmat, 2008). It can be stated that due to inability in personal living activities of autistic offspring parents of them have to confront more difficult life than normal children parents. Moreover, they are going through a social and psychological pressure in managing their child's numerous obstacles and resist themselves from their personal gains. Thus, their feeling of well-being turns in discontent.

Second objective stated that, if there is any difference in life satisfaction between parents with and without autistic children. Analyses (table 1) suggested that, significant differences were appeared in satisfaction with life between parents with autistic children and without autistic children, which supported by the findings of (Pisula & Porębowicz-Dörsmann, 2017).

Moreover, third objective was formulated to explore whether there is any disparity among the various income groups in terms of psychological well-being and life satisfaction of parents with autistic children. Notable difference in psychological well-being and life satisfaction (table 2) among different income groups' parents were detected. These findings are in favor with previous research (Pickard & Ingersoll, 2016). Science extra financial matter is related to treat their disabled children so it is usual to find difference in well-being and life satisfaction among parents of various income groups.

However, in the light of educational qualifications (fourth objective), the mentionable variation in psychological well-being and life satisfaction (table 2) among parents of autistic children group was disappeared. Results show inconsistency with past investigations (Benson, 2006). Despite having a difference in education level but it is equally miserable matter for all parents who have autistic children so it is not surprising to have similarity in the life satisfaction and psychological well-being of them.

Furthermore, our fifth objective determined to explore the discrepancy in psychological well-being and life satisfaction between mothers and fathers of autistic children. Results displayed (table 3) that mothers of autistic children have significantly lesser

psychological well-being and life satisfaction than fathers. This outcome is consistent with earlier studies (Nikmat *et al.*, 2008). Generally, as a primary caregiver mothers are more attached in their child rearing activities than fathers but in case of autistic child science they have additional psychological pressure or stress they get involve themselves by giving up other significant roles in their life. So it is quite natural to find mothers poor subjective well-being than father of autistic children.

The final (sixth) aim of this study was to discover the relationship between psychological wellbeing and life satisfaction. Table 4 exhibited that momentous link was existed between the variables which is in line with previous findings (Lombardo *et al.*, 2018). They also reported that people who are psychologically well they feel happy and optimistic as a result naturally will have satisfaction with their life.

Limitations

In the current study, data were collected from the different areas of Dhaka city in Bangladesh. It was hard to collect data from the parents with autistic children. They were very conservative to disclose their personal information and it seemed very tough to collect data. It was a great challenge for the researchers to convince them to fill up the scales. Sometimes they refused to fill up so many items. So, it was very challenging to collect data from them and it's created many problems. That's why it can be identified as a troublesome work and main limitation of my study. Second limitation of the study was that the sample size was small. Third limitation of this study could be limited articles and journals relating to the mental health status of parents with autistic children in relation to age and socio-economic status. Since this is only a preliminary study, therefore the small sample size may not represent the whole population of Bangladesh.

Conclusion

To inspect the psychological well-being and life satisfaction of parents with autistic children was the purpose of the present study. Results suggested that psychological wellbeing and life satisfaction of parents with autistic children were lower. Demographic variables are not related to psychological well-being and life satisfaction of parents with autistic children. Although, mothers expressed lower level of psychological well-being and life satisfaction. So, study impose significance of psychological intervention as the indicator of social supports for parents of autistic children to enhance their capacities in dealing with their child fostering related difficulties.

References

- Abbeduto, L., Seltzer, M.M., Shattuck, P., Krauss, M.W., Orsmond, G. and Murphy, M. M. (2004). Psychological Well-being and Coping in Mothers of Youths with Autism, Down Syndrome, or Fragile X Syndrome. *American Journal on Mental Retardation*, 109(3): 237-254.
- Akhter, S., Hussain, A.H.M. E, Biswas, A., (2018). Prevalence of Autism Spectrum Disorder (ASD) among the children aged 18-36 months in a rural community of Bangladesh: A cross sectional study, 7: 424.
- Bailey, T.C., Eng, W., Frisch, M.B. and Snyder, C. (2007). *Hope and Optimism as Related to Life Satisfaction. The Journal of Positive Psychology*, 2 (3):168-175.
- Benson, P.R. (2006). The Impact of Child Symptom Severity on Depressed Mood among Parents of Children with ASD: The Mediating Role of Stress Proliferation. *Journal of Autism and Developmental Disorders*, 36:685–695.
- Chaste, P. and Leboyer, M. (2012). Autism Risk Factors: Genes, Environment, and Gene- Environment Interactions. *Dialogues in Clinical Neuroscience*.14: 281-92.
- Cramm, J.M., Nieboer, A.P. and Cramm, J.M. (2011). Psychological Well-being of Caregivers of Children with Intellectual Disabilities: Using Parental Stress as a Mediating Factor. *Journal of Intellectual Disabilities*, 97(3): 215-230.
- Diener, E., Emmons, R., Larsen, R.J. and Griffin, S. (1995). *The Satisfaction with Life. Journal of Personality Assessment*, 41(1).
- Edwards, C. (2005). Research on faith and health: New Approach to old questions. *Faith and Health: Psychological Perspectives*. New York: Guilford Press.
- Falk, N.H., Norris, K. and Quinn, M.G. (2014). The Factors Predicting Stress, Anxiety and Depression in the Parents of Children with Autism. *Journal of Autism and Developmental Disorders*,44:3185-3203.
- Gonzalo S.T. and Landa, U.S. (2016). Women, Physical Activity, and Quality of Life: Self- Concept as a Mediator. *Span J Psychol*, 19.
- Gray, D. and Holden, W. (2009). Psychosocial Well-being among the Parents of Children with Autism. *Australia and New Zealand Journal of Developmental Disabilities*, 18 : 83-93.
- Haybron, D. (2006). Life Satisfaction, Ethical Reflection, and the Science of Happiness. *Journal of Happiness Studies*, 8(1):99-138.
- Helson, R., and Srivastava, S. (2001). Three Paths of Adult Development: Conservers, Seekers, and Achievers. *Journal of Personality and Social Psychology*, 80(6):995.
- Ilyas, Q.S.M. (2001). Bengali Version of Satisfaction with Life Scale (SWLS). *Unpublished Manuscript*. Department of Psychology, University of Dhaka.

- Keyes, C.L., Shmotkin, D. and Ryff, C.D. (2002). Optimizing Well-being: The Empirical Encounter of Two Traditions. *Journal of Personality and Social Psychology*, 82(6):1007.
- Lai, W.W., Goh, T.J., Oei, T.P. and Sung, M. (2015). Coping and Well-being in Parents of Children with Autism Spectrum Disorders (ASD). *Journal of Autism and Developmental Disorders*, 45(8): 2582–2593.
- Landa, R.J. (2008). Diagnostic of autism spectrum disorders in the first 3 years of life. *Nature Clinical Practice Neurology*, 4(3):138-147.
- Levy, S.E., Mandell, D.S. and Schultz, R.T. (2009). "Autism"*Lancet*, 374(9701): 1627-38.
- Lombardo, P., Jones, W., Wang, L., Shen, X. and Goldner, E. (2018). The Fundamental Association between Mental Health and Life Satisfaction: Results from Successive Waves of a Canadian National Survey. *BMC Public Health*, 18(1): 342.
- Lu, M., Yang, G., Skora, E., Wang, G., Cai, Y., Sun, Q. and Li, W.(2015). Self-esteem, Social Support, and Life Satisfaction in Chinese Parents of Children with Autism Spectrum Disorder. *Research in Autism Spectrum Disorders*, 17: 70-77
- Lyall, K., Croen, L., Daniels, J., Fallin, M.D., Ladd-Acosta, C., Lee, B.K. and . . . Newschaffer, C. (2017). The Changing Epidemiology of Autism Spectrum Disorders. *Annual Review of Public Health*, 38: 81–102.
- Marcelli, D. (2003). *Tratat de Psihopatologia Copilului/ Treatise on Child. Psychopathology*. Bucharest: Editura Fundației Generația.
- Myers, B.J., Mackintosh, V.H. and Goin-Kochel, R.P. (2009). My Greatest Joy and My Greatest Heart ache: Parents' Own Words on How Having a Child in the Autism Spectrum has Affected Their Lives and Their Families' Lives. *Research in Autism Spectrum Disorders*, 3:670-684.
- Neugarten, B.J., Havighurst, R.J., and Tobin, S.S. (1961). The Measurement of Life Satisfaction. *Journal of Gerontology*, 16, 134-143.
- Newschaffer, C., Croen, L.A., Daniels, J., Giarelli, E., Grether, J.K., Levy, S.E. and Windham, G.C. (2007). The Epidemiology of Autism Spectrum Disorders. *Annu Rev Public Health*, 28:235–58.
- Nikmat, A.W., Ahmad, M., Oon, N.L., and Razali, S. (2008). Stress and Psychological Well- being among Parents of Children with Autism Spectrum Disorder. *ASEAN Journal of psychiatry*, 9 (2):65-72.
- Ornoy, A., Weinstein-Fudim, L. and Shaltiel, E.Z. (2015). Prenatal Factors Associated with Autism Spectrum Disorder (ASD). *Reproductive Toxicology*, 56.
- Ou W.X, Cha, C.H. and Wang, L.H. (2010). Mental Health State of Parents of Children with Autism. *Zhongguo Dang Dai Er Ke Za Zhi*, 12(12):947-49.

- Pickard, K.E. and Ingersoll, B.R. (2016). Quality versus quantity: The Role of Socioeconomic Status on Parent-Reported Service Knowledge, Service Use, Unmet Service Needs, and Barriers to Service Use. *Autism*, 20:106–115.
- Pisula, E. and Porębowicz-Dörsmann, A. (2017). Family functioning, parenting stress and quality of life in mothers and fathers of Polish children with high functioning autism or Asperger syndrome. *PLOS ONE*, 12(10): e0186536.
- Qurashi, I., Stephenson, P., Chu, S., Duffy, C., Husain, N., and Chaudhry, I. (2015). An Evaluation of Subjective Experiences, Effects and Overall Satisfaction with Clozapine Treatment in UK Forensic Service. *Therapeutic Advances Psychopharmacology*, 5(3):146-150.
- Rutter, M. (2005). Incidence of Autism Spectrum Disorders: Changes Over Time and Their Meaning. *Acta Paediatr*, 94 (1): 2–15.
- Ryff, C.D. (1989a). Beyond Ponce de Leon and Life satisfaction: New Directions in Quest of Successful Ageing. *International Journal of Behavioral Development*, 12(1):35-55.
- Schmutte, P.S., and Ryff, C.D. (1997). Personality and Well-being: Reexamining Methods and Meanings. *Journal of Personality and Social Psychology*, 73:549-559.
- Stefanatos, G A. (2008). Regression in Autistic Spectrum Disorders. *Neuropsychology Review*. 18 (4):305–19.
- Totsika, V., Hastings, R.P., Emerson, E., Lancaster, G.A., and Berridge, D.M. (2011). A Population-Based Investigation of Behavioral and Emotional Problems and Maternal Mental Health: Associations with Autism Spectrum Disorder and Intellectual Disability. *J Child Psychol Psychiatry*, 52:91-99.
- Wissing, M.P. and Van-Eeden, C.(2002). Empirical Clarification of the Nature of Psychological Well-Being. *South African Journal of Psychology*, 32(1):32-34.
- de Waure, C., Soffiani, V., Viridis, A., Poscia, A., and Di Pietro, M.L. (2015). Italian University Students' Self-Perceived Health and Satisfaction of Life. *Ann Ist Super Sanita*, 51(2):121- 5.
- Zung, W.W. and Richards, C.B. and Short, M. J. (1965). Self-rating Depression Scale in an Outpatient clinic: Further Validation of the SDS. *Archives of General Psychiatry*, 13(6): 508-515.