**Quality of life of mothers of children with intellectual disability: do social support, maternal stress and socio-economic status play a role?**

**Abstract**

This study investigate the influence of perceived social support, maternal stress and socio-economicstatus on quality of life of mothers of children with intellectual disability, Oyo State, Nigeria. A total of 93 mothers of children with intellectual disability were respondents to a structured questionnaire. Findings revealed that perceived social support and socio-economicstatus had significant positive relationship with quality of life of mothers of children with intellectual disability. Result showed that the relationship between maternal stress and quality of life was negative and significant. Moreover, the study revealed that perceived social support had the highest relative contribution on quality of life of mothers followed by socio-economic status while the least was by maternal stress. Furthermore, the joint contribution of perceived social support, maternal stress and socio-economicstatus on quality of life of mothers was significant; therefore, the three variables should be given proper consideration so as to enhance quality of life mothers of children with intellectual disability.

**Keywords:** children with intellectual disability, maternal stress, perceived social support, socio-economicstatus, quality of life

**Introduction**

The birth of a child with intellectual disability will likely have a significant impact on family interaction and the business life of family and friends if not properly managed. The resulting effect may be observed on their mothers’ quality of life (QOL). This may be due to Children with intellectual disability requiring more care resulting in the parents experiencing more stressful situations in taking care of them (Karande & Kulkarni, 2009). Studies have shown that the level of emotional stress and depression among families of children with disabilities is high (Bahar Bahar, Savaş & Parla, 2009; Cakaloz & Kurul, 2005; Dereli & Okur, 2008). Such reactions are based on the fact that a child's condition is a deviation from the anticipation of the parent which, in turn, has a significant negative impact on their QOL. Thus, identifying factors that predict QOL of mothers of children with intellectual disability may be of interest in designing community services that can help provide greater support for mothers.

In line with this, evaluation of mother's QOL can serve as a reference for organizational improvement in terms of support services (Hu, Wang & Fei, 2011). Quality of life (QOL) refers to an individual's expectations of well-being in various areas of life, such as physical function, psychological development and social interaction (Buratta, Frova, Gargiulo, Gianicolo, Prati & Quattrociocchi, 2003). Previous research results have shown that the feeling of insufficiency, helplessness and guilt are felt by parents of children with disabilities (Dervishaliaj, 2013). In addition to having the feeling of guilt, the birth of a child with disabilities can adversely affect the relationship between the parents (Kande & Merrick, 2003; Leutar & Oršuliü, 2015). Additional strain and anxiety due to shifts in family structures are likely to affect the mother's QOL relative to other family members. The reason is that the mother will have to pay more attention to the social, educational and medical needs of the child.

The child will have to have to depend on the parents, and in most cases, the mother, which significantly limits her independence and freedom (Kande & Merrick, 2003). It may become even more frustrating because the child may not be able to fulfill the expectations of the parents due to the child inability to attain developmental milestones like the general population. Women have a greater responsibility to raise children in most developing communities around the world with mothers serving most often as the child’s primary caregivers (Ones, Yilmaz, Cetinkaya, & Caglar, 2005). Effective management of issues associated with taking care of children with intellectual disability will have an impact on the QOL of mothers than fathers (Oh & Lee, 2009). However, there are other factors that predict QOL of mothers of children with intellectual disability such perceived social support, maternal stress and socio-economic status of mothers. Therefore, the purpose of this research was to investigate the relationship existing between the perceived social support, maternal stress and socioeconomic status in predicting perceived QOL of mothers of children with intellectual disability.

**Literature Review**

*Perceived social support and quality of life*

There is a possibility of perceived social support received by mothers of children with intellectual disability to influence their QOL. Perceived social support as a variable is vital in minimising the potential psychological effects associated with raising children with intellectual disability (Aras, 2014; Bishop, Richler, Cain & Lord, 2007; Ozkubat, Ozdemir, Selimoğlu & Töret, 2014). There is a general perception that the negative effect of stressful situations on the QOL of a mother can be minimized through perceived social support (Charyton, Elliott, Lu & Moore 2009). Some studies have shown that perceived social support not only directly improves QOL, but also has an indirect positive impact in facilitating victims’ recovery which in turn will enhance QOL (Chung, Pan & Hsiung, 2009). However, despite the good intentions, perceived social support does not also have positive correlation on QOL (Chronister, Johnson & Berven, 2006) if poorly implemented. Findings have shown that perceived social support is not given to most families of children with disabilities (Ozsoy, Özkahraman & Çallı, 2006). The effect of inadequate perceived social support on the wellbeing of an individual is significant.

Studies has revealed that factors such as cultural context, events of life, individual characteristics and the relationship between provider and recipient of perceived social supports will determine the appropriateness of perceived social support (Chronister, Johnson & Berven, 2006, Lim & Zebrack, 2008; VonDras, Pouliot, Malcore & Iwahashi, 2008). Mother of children with intellectual disability may require perceived social support most of the time irrespective of the child’s age because of delay in cognitive development of the child. Perceived social support that is effectively provided will be of benefit to both mothers QOL and the development of children (Ersoy & Çürük. 2009). Getting the required perceived social support may be hampered by family income. Low socio-economic status does not have the same impact on mothers of children with intellectual disability when compared with mothers of children with typical development. The difference can be observed in areas such as QOL, productivity, condition of housing, psychological adjustment and relationship with people in the community (Park, Turnbull & Turnbull, 2002).Subjective support is more effective in improving post-traumatic stress disorder in comparison to objective support (Feng, Tan, Benjamin, Wen, Liu, Zhou, Li, Yang, Zhang, Li, et al, 2007).

*Maternal stress and quality of life*

The QOL of mothers of children with intellectual disability can be affected significantly by maternal stress. Current findings on the extent of maternal stress in families with children with severe health challenges and developmental disorder is inaccurate (Carter & McGoldrick, 2005). Some studies have shown that the level of stress among parents of children with severe health challenges are not the same when compared to parents of healthy children, such as parents of children with juvenile rheumatoid arthritis (Manuel, 2001) and kidney disease (Soliday, Kool & Lande, 2000). Behavioural problems were reported to have the most significant effect on maternal stress in a study that investigated QOL among parents of children with cerebral palsy (Mobarak, Khan, Munir, Zaman & McConache, 2000). Moreover, financial difficulties will lead to increased frustration among mothers of children with intellectual disability because of their inability to meet the needs of their child (Dervishaliaj, 2013; Luther, Canham & Cureton 2005). The resulting effect is that maternal stress will set in which will in turn have an impact on mother’s QOL.

Increased maternal stress is attributed to insufficient perceived social support services and the denial of their human rights. (Jones and Passey, 2005). Findings have revealed that support services and general resources can significantly reduce levels of stress among mothers (Meppelder, Hodes, Kef, & Schuengel, 2014). Reduction of maternal stress is important to providing proper care to the child with intellectual disability and mothers’ QOL. In addition, it has been stated that the availability of perceived social support to families with children with intellectual disabilities is significantly predicted (QOL) while perceived social support is positively associated with QOL. (Davis & Gavidia-Payne, 2009). The QOL of caregivers of children with intellectual disability is reported to have been influenced by variables such as parental wellbeing, family income and depression exacerbated by inadequate perceived social support (Lin, Hu, Yen, Hsu, Lin, Loh et al., 2009).

Psychological stress theory suggests that traumatic life experiences have a detrimental impact on mental wellbeing and physical health and are linked to social influences. In alignment with the theory, most studies on QOL have investigated the correlation between QOL and stress in previous studies (Lau & Yin, 2011; Shishehgar, Dolatian, Majd & Bakhtiary2014). Mothers of children with disabilities are more likely to find fault in themselves for having such children, and this will have an impact on their personal, social and psychological well-being (Sen & Yurtsever, 2007).

*Socio-economic status and quality of life*

Previous researches on the QOL of mothers seem to focus on mothers of children with developmental disabilities. The effects of socio-economic status, marital fulfilment and different forms of developmental disorder on QOL of mothers of children with neurodevelopmental disorders in Iran is significant (Mahani, Rostami, & Nejad, 2013). In essence socio-economic status and QOL of mothers of children have correlation (Rosenbaum, Helders, & Palisano, 2009). Families, especially mothers QOL is discussed with respect to financial aspects, health, value, occupation, and individual support dimensions of developmental disabilities (Ajuwon & Brown, 2012). In a study conducted by Ahmadizadeha, Rassafianib, Khalilia and Mirmohammadkhanic, (2015) income was identified as an underlying factor along with other variables that affects QOL but the relationship was not significant. While income is a key component of SES, the position of other factors, such as education, the number of children in the family and occupation, is also crucial to the improvement of an individual QOL (Dzator, 2013).

Multicultural studies have shown that ethnicity, gender, religion and socio-economic status of children's families with disabilities are important factors that have significant influence on QOL of caregivers (Oh & Lee, 2009). Improvements in the health of women and education are considered macro-level catalysts for long-term economic growth (Gill, Pande, and Malhotra 2007; Onarheim, Iversen, and Bloom 2016). Ribar and Stratton (2009) argued that the potential earnings of women and the time spent with children had a relatively positive relationship, although it was not statistically significant. The implication is that income and substitution impacts were partially mediated by each other. Moreover, through the intergenerational transmission of SES, higher maternal socio-economic status (SES) at the micro level may result in better outcomes for a woman’s own children.

**Purpose of the study**

The purpose of this study is to identify and analyze links between dependent variables (perceived social support, maternal stress and socio-economic status) and perceived quality of life among mothers of children with intellectual disability.

**Research Questions**

1. What is the relationship between the independent variables (perceived social support, maternal stress and socio-economic status) and the dependent variable (perceived quality of life among mothers of children with intellectual disability?

2. What is the composite influence of the independent (perceived social support, maternal stress and socio-economic status) and the dependent variable (perceived quality of life among mothers of children with intellectual disability?

3. What is the relative influence of the independent variables (perceived social support, maternal stress and socio-economic status) and the dependent variable (perceived quality of life among mothers of children with intellectual disability?

**Research Methodology**

The descriptive survey research design of expo-facto type was adopted for the study because it only examines independent variables that are already existing and how the dependent variable is predicted without manipulation.

**Participants**

Respondents for the study comprised 93 mothers of children with intellectual disability selected from 6 special schools in Oyo and Lagos state, Nigeria. Purposive sampling technique was adopted for selection of samples from 3 schools from the two states in order to ensure geographic coverage while respondents were selected using random sampling technique. The mean age of respondents was 35.2 years (SD = 5.7).

**Description of instrument**

Data were collected using a structured questionnaire tagged Predictors of Mother’s Quality of Life (PMQL) [α = 0.899], with sections A–E. Section A was the demographic section that sought information such as age, marital status and type of employment from the respondents. Section B was a twenty-five items questionnaire Family Quality of Life Scale developed by Beach Center, (2015). Response was provided on a 5-Likert scale (1- not at all important, 5- very important). Section C contained the twelve-item Perceived social support developed by Zimet, Dahlem, Zimet and Farley, (1988). Section D was the scale used for collection of information on Socio-economic status of respondents by asking questions related to level of education, residence and types of appliances in the house. Items on the scale were divided into 8 which were based on occupation, educational qualification, residence and types of electrical appliances in the home.Section E contained ten items questionnaire developed by Cohen and Williamson. (1988) used for collection of data on Perceived Stress level. It consisted of 5 points likert scale ranging from 0 = Never to 4 = Very Often. Respondents were expected to respond based on their feelings and thoughts in the last one month prior to answering the questionnaire.

**Results**

Demographic data collected from the respondents were analysed using descriptive statistics of frequency counts and simple percentage revealed that a total of 31 (33.3%) were in the age range of below 24 years old, 14 (15.1%) were 25 -29 years of old, 9 (9.7%) were 30 – 34 years, 13 (14.0%) were 45 – 49 years old, 15 (16.1%) were 45 – 49 % while 11 (11.8%) were in age of 50 years old and above participated in the study. Among them 40.9% were single, 49.5% married, while the divorced and widow were 4.3 and 5.4 % respectively. Furthermore the demographic information showed that 26.5% were unemployed, 32.3% were self-employed, 31.2% were on full time employment and 9.7% were on part time employment.

Table 1: Correlation between perceived social support, maternal stress and socio-economic status and perceived quality of life of mothers of individuals with intellectual disability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Mother Quality of Life | Perceived social support | Socio-economic status | Maternal Stress |
| Mother Quality of Life |  | 1 | .451\*\* | .254\* | -.209\* |
| Perceived social support |  |  | 1 | .049 | -.009 |
| **socio-economic status** |  |  |  | 1 | -.256\* |
| Maternal stress |  |  |  |  | 1 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | |

Using Pearson Moment Correlation Coefficient, it was observed that perceived social support (r = 0. 451\*\*, *p* > 0.01), socioeconomic status (r = 0. .254\*, *p* > 0.05) and maternal stress (r = -0.209\*\*, *p* > 0.01) had significant association with mother’s quality of life. Although, the relationship between maternal stress and mother’s quality of life was negative. This implies that decrease in maternal stress will lead to improved mother’s QOL of children with intellectual disability. Moreover, the result revealed that mother’s quality of life had a positive relationship with perceived social support and socioeconomic status. The implication is that increased perceived social support and improved socioeconomic status will lead to improvement in mother’s quality of life. Therefore, there is a strong link between the independent variables (perceived social support and socioeconomic status) and mother’s quality of life. However, the relationship between the independent variables (perceived social support, maternal stress and socio-economic status) and mother’s quality of life was not significant.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 2: Joint Relationship between perceived social support, maternal stress socio-economic status and perceived quality of life of mothers of individuals with intellectual disability   |  |  |  |  | | --- | --- | --- | --- | | R | R Square | Adjusted R Square | Std. Error of the Estimate | | .529a | .280 | .255 | 14.704 | | | | | | | |
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|  | Regression | 7469.212 | 3 | 2489.737 | 11.515 | .000b |
| Residual | 19243.778 | 89 | 216.222 |  |  |
| Total | 26712.989 | 92 |  |  |  |
| a. Dependent Variable: Mother Quality of Life Scale | | | | | | |
| b. Predictors: (Constant), perceived social support, maternal stress, socio-economic status | | | | | | |

Multiple regression was used to analyse the second and third research questions which reveal both the joint relationship (Table 2) and relative contribution (Table 3) of perceived social support, maternal stress, mother’s socioeconomic status to mother’s quality of life. Table 2a reveals the joint prediction of the three independent variables to the mother’s quality of life. That is the three predictor variables jointly influenced mother’s quality of life. The table also shows a coefficient of multiple correlations (R) of 0. 529a and a multiple R square of .280. This means that 28% was accounted for by the three predictor variables of the variance in mother’s quality of life when taken together. The significance of the composite contribution was tested at *p < 0.05* using the F-ratio at the degree of freedom (df = 3/89). The table equally indicates that the Analysis of Variance for the regression yielded an F-ratio of 11.515 (significant at 0.05 level). This implies that perceived social support, maternal stress, socio-economic status jointly contribute to mother’s quality of life of individuals with intellectual disability.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 3: Relative Contribution ofperceived social support, maternal stress and mother’s socioeconomic status to mother’s quality of life | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 56.513 | 15.671 |  | 3.606 | .001 |
| Perceived social support | .575 | .118 | .440 | 4.882 | .000 |
| Mother’s socioeconomic status | .299 | .145 | .193 | 2.068 | .042 |
| Maternal Stress | -.362 | .217 | -.155 | -1.669 | .099 |
| a. Dependent Variable: Mother Quality of Life Scale | | | | | | |

The relative contribution expressed as beta weights of the three independent variables to the dependent variable is captured in Table 3. The partial correlation coefficients of the perceived social support and socio-economic status were positively associated with mother’s quality of life. However, there was a negative partial correlation coefficient between maternal stress and mother’s quality of life. Using the standardized regression coefficient to determine the relative contributions of the independent variables to the explanation of the dependent variable, this study, as observed in Table 3, shows that perceived social support, was highly significant to mother’s quality of life of individuals with intellectual disability (β = 0. .440, t = 4.882, *p < 0.05*) while mother’s socioeconomic status contribution to mother’s quality of life (β = -0. 193, t = 2.068, *p <* 0.05) was marginally significant. However, the relative contribution of maternal stress to mother’s quality of life of individuals with intellectual disability was not significant (β = -0. 155, t = -1.669, *p* > 0.05). Their relative contribution of maternal stress status to mother’s quality of life was negative. In essence Table 3 shows that perceived social support and mother’s socioeconomic status contributed to improved quality of life experienced by mothers of individuals with intellectual disability. Furthermore, Table 3 shows that maternal stress contribution to quality of life of mothers of individuals with intellectual disability was both negative and not significant

**Discussion of findings**

Prior to this study, informal discussions and interaction discussions with mothers of individuals with intellectual disability in South West Nigeria have shown that the birth of a child with intellectual disability has an impact on the need for perceived social support, maternal stress and socio-economic status of mothers. This may be due to the additional care that is required to be provided to children with intellectual disability when compared to their regular peers, and thus, resulting in poor quality of life. Findings revealed that the level of emotional stress and depression is high among families of children with disabilities (Bahar Bahar, Savaş & Parla, 2009; Cakaloz & Kurul, 2005; Dereli & Okur, 2008).

Therefore, the results, based on the first research question, showed that perceived social support and socio-economic status predicted mother’s QOL. This study supports the conclusion of Aras (2014). Bishop, Richler, Cain & Lord (2007), Ozkubat, Ozdemir, Selimoğlu & Töret (2014) who noted that perceived social support is an important variable required to reduce the possible psychological effects associated with raising children with intellectual disability. The assertion of Ersoy and Çürük (2009) aligns with the findings that perceived social support when effectively provided will be of benefit to both mothers QOL and the development of children. The study supports the assertion of Gill, Pande, and Malhotra (2007), Onarheim, Iversen, and Bloom (2016) that improvements in the health of women and education are considered macro-level catalysts for long-term economic growth. Dervishaliaj (2013), Luther, Canham and Cureton (2005) noted that financial difficulties will lead to increased frustration among mothers of children with intellectual disability because of their inability to meet the needs of their child.

In response to the second research question, this study noted that perceived social support, maternal stress and socio-economic status jointly contribute to QOL of mothers of children with intellectual disability. Quality of life of mothers in this study is perceived as a psychological factor that is influenced by perceived social support, maternal stress and socio-economic status. The finding agrees with the report of Chronister, Johnson and Berven (2006), Lim and Zebrack (2008), VonDras, Pouliot, Malcore and Iwahashi (2008) that variables such as cultural context, events of life, individual characteristics and the relationship between provider and recipient of perceived social support will determine the appropriateness of perceived social support. Gill, Pande, and Malhotra (2007), Onarheim, Iversen, and Bloom (2016) that improvements in the health of women and education are considered macro-level catalysts for long-term economic growth. Ahmadizadeha, Rassafianib, Khalilia and Mirmohammadkhanic, (2015), Rosenbaum, Helders, and Palisano (2009) identified income as an underlying variable along with other factors that predict QOL.

This contribution of the independent variables to QOL of mothers of children with intellectual disability was identified in the study. The outcome revealed that the perceived social support and socio-economic status to QOL of mothers was positive and significant. The contribution of perceived social support was higher to QOL when compared with the contribution of socio-economic status. The implication is that and its associated factors are significant in predicting the QOL of mothers of children with intellectual disability. This finding aligns with Oh and Lee, (2009) that gender, religion and socio-economic status of families of children with disabilities are variables that significantly influence QOL of caregivers including mothers. Chronister, Johnson and Berven, 2006, Lim and Zebrack, 2008; VonDras, Pouliot, Malcore and Iwahashi (2008) claim that the interaction between provider and recipient of perceived social support will determine the appropriateness of perceived social support. Thus, perceived social support as a variable is crucial in minimizing the potential psychological effects associated with raising children with intellectual disability (Aras, 2014; Bishop, Richler, Cain & Lord, 2007), Ozkubat, Ozdemir, Selimoğlu & Töret (2014).

**Conclusion**

The effect of perceived social support, maternal stress and socio-economic status on QOL of mothers of children with intellectual disability was acknowledged in this study. It further established that perceived social support and socio-economic status have significant relative effectiveness on QOL of mothers while the relative contribution of maternal stress on QOL of mothers of children with intellectual disability was not significant. Based on the findings, the conclusion is that perceived social support, maternal stress and socio-economic status had a joint effect on QOL of mothers of children with intellectual disability. The relationship between maternal stress and QOL of mothers was observed to be negative which shows that decrease in maternal stress will result in improved QOL of mothers of children with intellectual disability.

**Limitations**

Generalizability of the findings is limited by size of the respondents and descriptive research design adopted in the study. The purpose of the study was to determine the relationship between the independent variables (support services, maternal stress and socio-economic status) and of QOL among mothers of children with intellectual disability in Nigeria. The finding may be restricted to mothers of children with intellectual disability and not the general population. Although, studies that investigated the relationship between dependent variables (perceived social support, maternal stress and socio-economic status) and QOL of mothers of children with intellectual disability in Nigeria is not known to the researchers. The results should therefore be interpreted with caution.

**Funding:** This work was supported by the South African Research Chairs Initiative of the Department of Science and Innovation and National Research Foundation of South Africa. South African Research Chair, Education and Care in Childhood, Faculty of Education, University of Johannesburg South Africa [grant number: 87300, 2017].

**Acknowledgments**: The authors acknowledge the mothers of children with intellectual disability who responded to the questionnaire, authors whose materials they consulted and Mrs. Mojisola O. Udeme-Jacob for her support in ensuring that the study was carried out.

**Conflict of interest**: The authors confirm that there is no conflict of interest with respect to the data presented in this paper.

# **References** Ahmadizadeha, Z. Rassafianib M. Khalilia, M.A Mirmohammadkhanic, M (2015) Factors Associated with Quality of Life in Mothers of Children with Cerebral Palsy in Iran. *Hong Kong Journal of Occupational Therapy*, 25; 15-22 [https://doi.org/10.1016/j.hkjot.2015.02.002](https://doi.org/10.1016%2Fj.hkjot.2015.02.002)

Ajuwon PM, & Brown I. (2012) Family quality of life in Nigeria. *Journal of Intellectual Disability Research*; 56:61‑70.   <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2788.2011.01487.x>

Aras, I. (2014). The quality of life of parents of children with hearing impairments and speech. Doctoral thesis. Zagreb University School of Medicine in Zagreb

Bahar A, Bahar G, Savaş HA, & Parlar S. (2009) Engelli çocukların annelerinin depresyon ve anksiyete düzeyleri ile stresle başa çıkma tarzlarının belirlenmesi (Determination of depression and anxiety levels, and stress coping styles of mothers of children with disabilities) Fırat Sağlık Hizmetleri Dergisi;4:97-112.

Beach Center on Disabilities. (2006). Family Quality of Life Scale. Beach Center on Disabilities, Lawrence, KS, USA.

Bishop SL, Richler J, Cain AC & Lord C. (2007) Predictors of perceived negative impact in mothers of children with autism spectrum disorder. *America Journal of Mental Retardation*, 112:450-61. DOI: [10.1352/0895-8017(2007)112[450:POPNII]2.0.CO;2](https://doi.org/10.1352/0895-8017(2007)112%5b450:popnii%5d2.0.co;2)

Buratta V, Frova L, Gargiulo L, Gianicolo E, Prati S, Quattrociocchi L. (2003) EUROHIS - Developing Common Instruments for Health Surveys. Copenhagen:

Cakaloz B, & Kurul S. (2005) The investigation of duchenne muscular dystrophy children's family functions and their mothers' depression and anxiety levels. *Journal of Clinical Psychiatry*; 8:24-30

Carter B., & McGoldrick M. (2005). The expanded family life cycle, (3rd ed). Boston: Allyn and Bacon

Charyton C, Elliott O. J., Lu Bo, & Moore JL (2009) The impact of social support on health related quality of life in persons with epilepsy. *Epilepsy & Behavior*, 16:640-645. DOI: [10.1016/j.yebeh.2009.09.011](https://doi.org/10.1016/j.yebeh.2009.09.011)

Chung L, Pan A, & Hsiung P: (200) Quality of life for patients with major depression in Taiwan: A model-based study of predictive factors. *Psychiatry Research*, 168(2):153-162 DOI: [10.1016/j.psychres.2008.04.003](https://doi.org/10.1016/j.psychres.2008.04.003)

Cohen, S. & Williamson, G. (1988) Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) The Social Psychology of Health. Newbury Park, CA: Sage.

Davis K, & Gavidia-Payne S. (2009). The impact of child, family, and professional support characteristics on the quality of life in families of young children with disabilities. *Journal of Intellectual and Developmental Disability*; 34:153-62 DOI: [10.1080/13668250902874608](https://doi.org/10.1080/13668250902874608)

Dereli F, & Okur S. (2008) Engelli çocuğa sahip olan ailelerin depresyon durumunun belirlenmesi (Determination of depression status of families with disabled children). Yeni Tıp Dergisi, 25:164-8

Dzator, J. (2013). Hard times and common mental health disorders in developing countries: Insights from urban Ghana. The Journal of Behavioral Health Services & Research, 40(1), 71–87. [https://doi.org/10.1007/s11414-012-9305-z](https://psycnet.apa.org/doi/10.1007/s11414-012-9305-z)

Ersoy Ö, & Çürük N. (2009) Özel gereksinimli çocuğa sahip annelerde sosyal desteğin önemi (The importance of social support for the mothers of the children who have special needs). Sosyal Politika Çalışmaları Dergisi, 17:104-10. Available from: <http://dergipark.gov.tr/download/article-file/198189>. [Last cited on 2018 Mar 20].

Feng S, Tan H, Benjamin A, Wen S, Liu A, Zhou J, Li S, Yang T, Zhang Y, Li X, et al: Social Support and Posttraumatic Stress Disorder among Flood Victims in Hunan, China. Annals of Epidemiology 2007, 17(10):827-833

Gill, Kirrin, Rohini Pande, and Anju Malhotra. "Women deliver for development." The Lancet 370, no. 9595 (2007): 1347-1357 DOI: [10.1016/S0140-6736(07)61577-3](https://doi.org/10.1016/s0140-6736(07)61577-3)

Hoffman, L., Marquis, J., Poston, D. Summers, J. A., & Turnbull, A. (2006). Assessing Family Outcomes: Psychometric Evaluation of the Beach Center Family Quality of Life Scale. *Journal of Marriage and Family*, 68 (4), 1069-1083. <https://doi.org/10.1111/j.1741-3737.2006.00314.x>

Hu, X., Wang, M., & Fei, X. (2011). Family quality of life of Chinese families of children with intellectual disabilities. *Journal of Intellectual Disability Research*, 56 (1), 30-44. DOI: [10.1111/j.1365-2788.2011.01391.x](https://doi.org/10.1111/j.1365-2788.2011.01391.x)

Kande, I. & Merrick, J (2003). The Birth of a Child with Disability Coping by Parents and Siblings. *The Scientific World Journal* 3, 741-750

Karande, S & Kulkarni S (2009) Quality of life of parents of children with newly diagnosed specific learning disability Journal of Postgraduate Medicine, 55 (2), 97-103

Lau Y, & Yin L. (2011) Maternal, obstetric variables, perceived stress and health related quality of life among pregnant women in Macao, China. Midwifery. 27:668–673

Lim JW, & Zebrack B: (2008) Different pathways in social support and quality of life between Korean American and Korean breast and gynecological cancer survivors. Quality of Life Research 2008, 17(5):679-689.

Lin, J.D., Hu, J., Yen, C.F., Hsu, S.W., Lin, L.P., Loh, C.H., et. al. (2009). Quality of life and caregivers of children and adolescents with intellectual disabilities: use of WHOQOL-BREF survey. *Research in Developmental Disabilities*, 30 (6), 1448-1458.

Luther EH, Canham DL, & Cureton VY. (2005) Coping and social support for parents of children with autism. Journal of School Nursing; 21: 40-7.

DOI: [10.1622/1059-8405(2005)021[0040:cassfp]2.0.co;2](https://doi.org/10.1622/1059-8405(2005)021%5b0040:cassfp%5d2.0.co;2)

Mahani, M.K. Rostami, H.R. & Nejad S.J. (2013) Investigation of quality of life determinants among mothers of children with pervasive developmental disorders in Iran Hong Kong *Journal of Occupational Therapy*, 23 (1), 14-19 [https://doi.org/10.1016/j.hkjot.2013.03.002](https://doi.org/10.1016%2Fj.hkjot.2013.03.002)

Manuel JC (2001)Risk and resistance factors in the adaptation in mothers of children with juvenile rheumatoid arthritis. J*ournal of Pediatric Psychology,* 26(4):237-46*.* DOI: [10.1093/jpepsy/26.4.237](https://doi.org/10.1093/jpepsy/26.4.237)

Meppelder, M., Hodes, M., Kef, S., & Schuengel, C. (2015). Parenting stress and child behaviour problems among parents with intellectual disabilities: the buffering role of resources. *Journal of Intellectual Disability Research*, 59(7), 664-677. <https://doi.org/10.1111/jir.12170>

Meral BF, & Cavkaytar A. (2015) Otizmli çocuk ailelerinin aile yaşam kalitesi algilari (The perceptions of family quality of life of parents of children with autism). Kastamonu Eğitim Dergisi; 23:1363-80.

Mobarak R, Khan NZ, Munir S, Zaman SS, McConachie H (2000) Predictors of stress in mothers of children with cerebral palsy in Bangladesh. *Journal of Pediatric Psychology.* 25(6):427-33*.*  DOI: [10.1093/jpepsy/25.6.427](https://doi.org/10.1093/jpepsy/25.6.427)

Oh, H & Lee E, (2009) Caregiver burden and social support among mothers raising children with developmental disabilities in South Korea *International Journal of Disability, Development and Education*, 56 (2). 149-167 <https://doi.org/10.1080/10349120902868624>

Ones, K. Yilmaz, E, Cetinkaya, B & Caglar N (2005) Assessment of the quality of life of mothers of children with cerebral palsy (primary caregivers) *Neurorehabilitation and Neural Repair,* 19 (3), 232-237 DOI: [10.1177/1545968305278857](https://doi.org/10.1177/1545968305278857)

Onarheim, Kristine Husøy, Johanne Helene Iversen, and David E. (2016) Bloom. "Economic benefits of investing in women’s health: A systematic review." PloS one 11(3) e0150120 DOI: [10.1371/journal.pone.0150120](https://doi.org/10.1371/journal.pone.0150120)

Ozkubat U, Ozdemir S, Selimoğlu OG, & Töret G. (2014) Otizme yolculuk: Otizmli çocuğa sahip ebeveynlerin sosyal destek algılarına ilişkin görüşleri (Journey to autism: opinions of parents with autistic children on social support perceptions). Ondokuz Mayıs Üniv Eğitim Fakültesi Dergisi; 33: 323-48. Available from: <http://dergipark.gov.tr/download/article-file/188069> [Last cited on 2018 Mar 08].

Park, J., Turnbull, A.P., & Turnbull, H.R. (2002). Impacts of poverty on quality of life in families of children with disabilities. The Council for Exceptional Children, 68 (2), 151-170. [https://doi.org/10.1177/001440290206800201](https://doi.org/10.1177%2F001440290206800201)

Shishehgar S, Dolatian M, Majd HA, Bakhtiary M. (2014) Perceived pregnancy stress and quality of life amongst Iranian women. *Global Journal of Health Scence*. 6:270–277.DOI:[10.5539/gjhs.v6n4p270](https://doi.org/10.5539/gjhs.v6n4p270)

Soliday E, Kool E, Lande MB (2000)Psychosocial adjustment in children with kidney disease. *Journal of Pediatric Psychology.* 25(2):93-103*.* DOI: [10.1093/jpepsy/25.2.93](https://doi.org/10.1093/jpepsy/25.2.93)

Verdugo, M.A., Córdoba, L., & Gómez, J. (2005). Spanish adaptation and validation of the Family Quality of Life Survey. *Journal of Intellectual Disability Research*, 49 (10), 794-798. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2788.2005.00754.x>

VonDras DD, Pouliot GS, Malcore SA, Iwahashi S (2008) Effects of culture and age on the perceived exchange of social support resources. *International Journal of Aging & Human Development*, 67(1):63-100 [https://doi.org/10.2190/AG.67.1.d](https://psycnet.apa.org/doi/10.2190/AG.67.1.d)

Zimet GD, Dahlem NW, Zimet SG, Farley GK. (1988) The multidimensional scale of perceived social support. *Journal of personality assessment*; 52:30-41 <https://doi.org/10.1207/s15327752jpa5201_2>