Original Article
DOI: https://doi.org/10.70749/ijbr.v3i4.2095

INDUS JOURNAL OF BIOSCIENCE RESEARCH
https://ijbr.com.pk
ISSN: 2960-2793/ 2960-2807

Examining the Frequency of Depression in Mothers of Children with Intellectual Disability

Usama Anees[1], Fiaza Saleem[1], Iqra Naeem[1], Syed Rafeh Ali Bukhari[1], Muhammad Irfan Jamil[2]

[1]Department of Psychiatry, Lahore General Hospital, Lahore, Punjab, Pakistan.
[2]Department of Nephrology, Lahore General Hospital, Lahore, Punjab, Pakistan.

ARTICLE INFO

Keywords: Maternal depression, Intellectual disability, Beck depression inventory, Psychological distress, Caregiver burden.

Correspondence to: Iqra Naeem,
Department of Psychiatry, Lahore General Hospital, Lahore, Punjab, Pakistan.
Email: iqraanaeem2011@gmail.com

Declaration
Authors' Contribution
All authors equally contributed to the study and approved the final manuscript

Conflict of Interest: No conflict of interest.

Funding: No funding received by the authors.

Article History
Received: 16-02-2025 Revised: 12-04-2025
Accepted: 21-04-2025 Published: 30-04-2025

ABSTRACT

Background: Mothers of children with intellectual disability experience elevated psychological distress compared to the general population. This study aimed to determine the frequency and severity of depression among mothers of children with intellectual disability. **Methods:** A cross-sectional study was conducted at the Department of Psychiatry, Lahore General Hospital, from August 2024 to January 2025. One hundred mothers of children with intellectual disability aged 4-18 years were enrolled using consecutive sampling. Depression was assessed using Beck's Depression Inventory, with scores categorized as minimal (0-13), mild (14-19), moderate (20-28), or severe (29-63). Child intellectual disability severity was documented using Wechsler Intelligence Scale scores. Chi-square tests examined associations between demographic variables and depression severity. **Results:** The mean maternal age was 34.6±7.2 years. Depression was present in 81 mothers (81%), with 19 (19%) showing minimal depression, 24 (24%) mild depression, 32 (32%) moderate depression, and 25 (25%) severe depression. The mean BDI score was 22.4±8.6. Significant associations were found between depression severity and maternal education level (χ^2=12.8, p=0.005), with 25 illiterate mothers (78.1%) experiencing moderate to severe depression. Family income showed significant association (χ^2=15.3, p=0.002), with 31 mothers (73.8%) from low-income families experiencing moderate to severe depression. Employment status was significantly associated (χ^2=8.7, p=0.003), with 50 housewives (64.1%) showing moderate to severe depression. Child-related factors included intellectual disability severity (χ^2=18.6, p<0.001) and presence of comorbidities (χ^2=11.4, p=0.001), with 46 mothers (68.7%) of children with comorbidities experiencing moderate to severe depression. **Conclusions:** Depression prevalence among mothers of children with intellectual disability was substantially elevated, with severity linked to child disability characteristics and maternal socioeconomic factors. Comprehensive mental health screening and targeted interventions are essential for this vulnerable population.

INTRODUCTION

Intellectual Disability (ID), also historically known as mental retardation, is characterized by significant limitations in intellectual functioning, also called intelligence, and in adaptive behavior including conceptual, social and practical skills, with onset before the age of 18 [1]. The prevalence of intellectual disability (ID) is known to differ between countries and is estimated to be within the range of 1-3% of the global population [2]. Intellectual disability (ID) is a chronic and debilitating condition that has lasting impacts on individuals and their families. The birth of a child with ID can elicit complex emotions in both the mother and other family members. Parenting a child with ID is a lifelong process that has profound and ongoing effects on parents and other family members [3,4].

While both parents play important roles in the care of children with ID, mothers tend to assume a greater responsibility for the caring, rearing, and education of their child, particularly in Asian countries. This may be due to cultural expectations and gender roles that prioritize mothers as primary caregivers. As a result, mothers of children with ID may experience greater challenges and stressors than fathers. Research has shown that compared to mothers of children with typical development, mothers of children with ID often report lower levels of family

functioning, higher caregiver burden, and a lower sense of coherence [5,6]. As nurturing an ID child is lifelong and time-consuming, the mothers reported that they were emotionally and physically exhausted and felt socially isolated. Parents often have needs during this time that are not addressed by professionals because of the exclusive focus on the child during the evaluation [7].

In a cross-sectional study involving 100 patients diagnosed with intellectual disability (ID), researchers assessed the mental health of the patients' mothers. The results showed that the average age of ID patients was 11.52 years, with 3.01 years of schooling, and a mean intelligence quotient of 45.17. The study reported a 79% prevalence of depression in mothers of ID children, with higher prevalence in mothers of female ID children. Depression was more common in mothers of patients with significant comorbidities (92.40%) compared to those without comorbidities (28.57%) [8]. Another study reported that 73% of the mothers in the study have various degrees of depression, 36% of them suffering from mild depression and 21% from severe depression. In the analysis, there were no significant relationship between the depression levels of the mothers, with their husbands' jobs, the child's gender, the parents being related, mothers' health conditions, mothers' education, the child's age, mothers' age, mothers' job, and the family's housing situation. The only significant relationship was between the mother's depression levels and the child's disability type [9]. Dogar et al. found that the prevalence of depression among mothers was 40%, with the highest occurrence of depression observed in mothers of children with moderate intellectual disability (ID) at 57% [1].

Depression is a prevalent psychiatric disorder and the leading cause of disability worldwide. Research has shown that 35%-53% of mothers of children with ID experience symptoms of depression [8,10,11]. The varying prevalence rates of depression among mothers of children with ID, as reported in different studies, highlight the need for further investigation to better understand the factors contributing to these discrepancies. Despite the substantial impact of maternal depression on individual and family well-being, few studies have been conducted in Pakistan on this topic. Investigating the prevalence and factors associated with depression among mothers of children with ID is essential for informing targeted interventions and support mechanisms to improve mental health in this vulnerable population. This study aimed to examine the frequency, severity, and demographic correlations of depression in mothers of children with ID.

MATERIAL AND METHODS

This cross-sectional study was conducted at the Department of Psychiatry, Lahore General Hospital, Lahore, Pakistan. The study was carried out over a period of six months from August 2024 to January 2025 after taking ethical approval from institutional review committee. The hospital serves as a major tertiary care facility providing psychiatric and rehabilitation services to patients from Lahore and surrounding districts.

Participants were selected using non-probability consecutive sampling technique, where all eligible mothers attending the psychiatric department during the study period were approached for participation. The sample size was calculated based on an anticipated depression frequency of 79% among mothers of children with intellectual disability, as reported in previous literature. Using a 95% confidence level and 8% margin of error, the required sample size was determined to be 100 mothers [8].

Mothers were included in the study if they were biological mothers aged between 18 and 50 years, had a child diagnosed with intellectual disability by a qualified professional such as a psychologist, psychiatrist, or developmental pediatrician, and their child was aged between 4 and 18 years. Additionally, mothers needed to be willing and capable of providing informed consent for participation. Several exclusion criteria were applied to ensure data quality and minimize confounding factors. Mothers with a documented history of severe psychiatric disorders including bipolar disorder or schizophrenia, those with current substance abuse, and mothers who had experienced significant life events or losses such as death of a close family member within the preceding six months were excluded. Mothers with cognitive impairment or medical conditions that could affect their ability to understand and complete the study assessments were also excluded. Furthermore, mothers with a history of chronic medical conditions including chronic kidney disease, chronic liver disease, ischemic heart disease, chronic obstructive pulmonary disease, or arthritis were not included in the study.

Depression was assessed using Beck's Depression Inventory score ranges. Minimal depression was defined as a BDI score between 0-13, mild depression as a score of 14-19, moderate depression as a score of 20-28, and severe depression as a score of 29-63. Each item on the 21-item BDI scale was scored from 0-3, with higher scores indicating more severe depressive symptoms. Intellectual disability was defined as significant limitations in both intellectual functioning and adaptive behavior, including conceptual, social, and practical skills, with onset before 18 years of age. The diagnosis had to be confirmed by a qualified professional. The severity of intellectual disability was categorized based on Intelligence Quotient scores obtained through the Wechsler Intelligence Scale for Children. Mild intellectual disability was defined as an IQ score between 50-70, moderate as 35-49, severe as 20-34, and profound as below 20.

After obtaining approval for the study protocol, eligible participants were identified and approached for participation. Written informed consent was obtained from all mothers before enrollment. A structured questionnaire was administered to collect demographic information including maternal age, educational level, employment status, marital status, family income, and number of children. Information about the child included age, gender, intellectual disability severity level, and presence of comorbidities. The Beck's Depression Inventory was administered to assess depressive symptoms among participating mothers. The child's intellectual disability severity was documented based on Intelligence Quotient scores previously assessed by qualified psychologists using standardized testing protocols. All data collection was conducted in a private setting to ensure confidentiality, and participant information was kept secure throughout the study period.

Statistical Analysis

Data analysis was performed using SPSS version 26.0 software package. Descriptive statistics were calculated for all variables, with demographic characteristics presented as means and standard deviations for continuous variables and frequencies with percentages for categorical variables. The distribution of Beck Depression Inventory scores was examined, and mean scores with standard deviations were calculated to determine the overall severity of depression in the study population. Inferential statistics were employed to examine associations between demographic variables, intellectual disability severity, and depression levels. Chi-square tests were used to assess relationships between categorical variables and depression severity. Post-stratification analysis was conducted to examine the effects of potential confounding variables including maternal age, education level, employment status, marital status, family income, and child's intellectual disability severity on maternal depression. The level of statistical significance was set at $p < 0.05$ for all analyses.

RESULTS

A total of 100 mothers of children with intellectual disability were enrolled in this cross-sectional study. The mean maternal age was 34.6 ± 7.2 years, with the majority (48%) falling within the 31-40 years age group. Regarding educational attainment, 32% of mothers were illiterate, 28% had completed primary education, 23% had secondary education, and 17% had achieved higher education levels. The employment analysis revealed that 78% of mothers were housewives, while 22% were employed in various professions. Marital status distribution showed 92% were married, 5% were divorced, and 3% were widowed. Family income assessment indicated that 42% of families earned between PKR 15,000-30,000 monthly, 35% earned PKR 31,000-45,000, 15% earned PKR 46,000-60,000, and 8% earned above PKR 60,000. The children with intellectual disability had a mean age of 9.8 ± 4.1 years, with 58% being male and 42% female. The severity distribution of intellectual disability showed 45% had mild ID (IQ 50-70), 32% had moderate ID (IQ 35-49), 18% had severe ID (IQ 20-34), and 5% had profound ID (IQ <20). Comorbidities were present in 67% of children, with epilepsy being the most common (34%), followed by behavioral disorders (28%) and physical disabilities (15%).

Table 1

Demographic and Clinical Characteristics of Study Participants

Characteristic	Category	Frequency (n)	Percentage (%)
Maternal Age	18-30 years	28	28.0
	31-40 years	48	48.0
	41-50 years	24	24.0
Education Level	Illiterate	32	32.0
	Primary	28	28.0
	Secondary	23	23.0
	Higher education	17	17.0
Employment Status	Housewife	78	78.0
	Employed	22	22.0
Marital Status	Married	92	92.0
	Divorced	5	5.0
	Widowed	3	3.0
Family Income (PKR)	15,000-30,000	42	42.0
	31,000-45,000	35	35.0
	46,000-60,000	15	15.0
	>60,000	8	8.0
Child Gender	Male	58	58.0
	Female	42	42.0
ID Severity	Mild	45	45.0
	Moderate	32	32.0
	Severe	18	18.0
	Profound	5	5.0
Comorbidities	Present	67	67.0
	Absent	33	33.0

Depression Prevalence and Severity

The Beck Depression Inventory assessment revealed that 81 mothers (81%) experienced varying degrees of depression, while 19 mothers (19%) showed minimal or no depression. Among those with depression, 24 mothers (24%) had mild depression (BDI score 14-19), 32 mothers (32%) had moderate depression (BDI score 20-28), and 25 mothers (25%) had severe depression (BDI score 29-63). The mean BDI score was 22.4 ± 8.6, indicating a moderate level of depression in the study population.

Table 2

Depression Severity Distribution According to BDI Scores

Depression Severity	BDI Score Range	Frequency (n)	Percentage (%)	Mean BDI Score ± SD
Minimal	0-13	19	19.0	8.2 ± 3.1
Mild	14-19	24	24.0	16.5 ± 1.8
Moderate	20-28	32	32.0	24.1 ± 2.4
Severe	29-63	25	25.0	35.7 ± 4.9
Total		100	100.0	22.4 ± 8.6

Chi-square analysis revealed significant associations between maternal depression and several demographic variables. Maternal education level showed a statistically significant relationship with depression severity ($\chi^2 = 12.8$, $p = 0.005$), with higher depression rates observed in mothers with lower educational attainment. Illiterate mothers demonstrated the highest prevalence of moderate to severe depression (78.1%), compared to 52.9% in mothers with higher education. Family income was significantly associated with maternal depression ($\chi^2 = 15.3$, $p = 0.002$), with 73.8% of mothers from low-income families (PKR 15,000-30,000) experiencing moderate to severe depression, compared to 37.5% in higher-income families (>PKR 60,000). Employment status showed a significant association ($\chi^2 = 8.7$, $p = 0.003$), with unemployed mothers (housewives) showing higher rates of depression (59%) compared to employed mothers (36.4%). Maternal age and marital status did not demonstrate statistically significant associations with depression severity ($p > 0.05$).

Table 3

Association Between Maternal Characteristics and Depression Severity

Characteristic	Minimal n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	χ^2	p-value

Education Level						
Illiterate	4(12.5)	3(9.4)	14(43.8)	11(34.4)		
Primary	6(21.4)	7(25.0)	9(32.1)	6(21.4)	12.8	0.005
Secondary	5(21.7)	8(34.8)	6(26.1)	4(17.4)		
Higher education	4(23.5)	6(35.3)	3(17.6)	4(23.5)		
Family Income						
15,000-30,000	5(11.9)	6(14.3)	18(42.9)	13(31.0)		
31,000-45,000	7(20.0)	10(28.6)	11(31.4)	7(20.0)	15.3	0.002
46,000-60,000	4(26.7)	5(33.3)	3(20.0)	3(20.0)		
>60,000	3(37.5)	3(37.5)	0(0.0)	2(25.0)		
Employment Status						
Housewife	12(15.4)	16(20.5)	28(35.9)	22(28.2)	8.7	0.003
Employed	7(31.8)	8(36.4)	4(18.2)	3(13.6)		

The analysis of child-related factors revealed significant associations with maternal depression. The severity of intellectual disability demonstrated a strong correlation with maternal depression levels (χ^2 = 18.6, p < 0.001). Mothers of children with severe and profound ID showed higher rates of moderate to severe depression (83.3% and 100%, respectively) compared to mothers of children with mild ID (48.9%). The presence of comorbidities in children was significantly associated with maternal depression (χ^2 = 11.4, p = 0.001), with 68.7% of mothers of children with comorbidities experiencing moderate to severe depression compared to 36.4% of mothers whose children had no comorbidities. Child gender and age did not show statistically significant associations with maternal depression severity (p > 0.05).

Table 4

Association Between Child Characteristics and Maternal Depression

Characteristic	Minimal n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	χ^2	p-value
ID Severity						
Mild	12(26.7)	11(24.4)	14(31.1)	8(17.8)		
Moderate	5(15.6)	8(25.0)	12(37.5)	7(21.9)	18.6	<0.001
Severe	2(11.1)	3(16.7)	6(33.3)	7(38.9)		
Profound	0(0.0)	2(40.0)	0(0.0)	3(60.0)		
Comorbidities						
Present	9(13.4)	12(17.9)	25(37.3)	21(31.3)	11.4	0.001
Absent	10(30.3)	12(36.4)	7(21.2)	4(12.1)		
Child Gender						
Male	10(17.2)	15(25.9)	19(32.8)	14(24.1)	2.3	0.512
Female	9(21.4)	9(21.4)	13(31.0)	11(26.2)		

DISCUSSION

The present study revealed a high prevalence of depression (81%) among mothers of children with intellectual disability, with 57% experiencing moderate to severe depression. This finding aligns with the substantial body of literature demonstrating elevated psychological distress in this vulnerable population, though notable variations exist across different studies and geographical contexts.

The depression prevalence observed in this study falls within the range reported in previous research but demonstrates considerable consistency with several key studies. Fahim et al. (2017) reported an even higher prevalence of 89.6% among mothers of learning-disabled children in Rawalpindi, with 62.5% experiencing moderate to severe depression [12]. Similarly, Motamedi et al. (2007) found that 73% of mothers of disabled children in Iran had various degrees of depression, with 21% experiencing severe depression [9]. The current study's findings of 81% overall prevalence positions it consistently within this established pattern of high maternal depression rates.

Conversely, some studies have reported lower prevalence rates, highlighting the complexity of factors influencing maternal mental health. Fatima et al. (2021) found a considerably lower depression rate of 37.5% among mothers of children with neurodevelopmental disorders in India, though this study employed different diagnostic criteria using PHQ-9 with MINI-PLUS confirmation [13]. Another study reported an even more modest prevalence of 49.38% among mothers of children with cerebral palsy, suggesting that specific disability types may differentially impact maternal psychological wellbeing [14]. These variations underscore the importance of standardized assessment tools and uniform diagnostic criteria in comparative research.

The association between intellectual disability severity and maternal depression observed in this study corroborates existing literature. The current findings demonstrated that mothers of children with severe and profound ID experienced higher rates of moderate to severe depression (83.3% and 100%, respectively) compared to those with mild ID (48.9%). This pattern aligns with Zaidi et al. (2019), who found that parents of children with cerebral palsy suffered higher depression rates (69.3%) compared to those with Down syndrome (49%) [15]. The progressive increase in maternal depression with disability severity suggests a dose-response relationship between caregiving burden and psychological distress.

The significant association between socioeconomic factors and maternal depression identified in this study reinforces findings from multiple previous investigations. The current study found that 73.8% of mothers from low-income families experienced moderate to severe depression, compared to 37.5% in higher-income families. This mirrors the findings of Ahmad et al. (2022), who

identified financial problems as the most significant factor affecting parental psychology, with 72.8% of parents from low socioeconomic backgrounds experiencing moderate to severe depression [16]. Zaidi et al. (2019) similarly reported that uneducated parents showed significantly higher depression rates (79.4%) compared to those with basic education (61.1%) [15].

The relationship between maternal education and depression severity demonstrated in this study provides important insights into protective factors. Higher educational attainment appeared to confer some resilience against severe depression, with only 41.1% of mothers with higher education experiencing moderate to severe depression compared to 78.1% of illiterate mothers. This educational gradient in mental health outcomes suggests that knowledge, coping resources, and access to information may serve as protective mechanisms against psychological distress.

Employment status emerged as another significant predictor, with housewives showing substantially higher depression rates (64.1%) compared to employed mothers (31.8%). This finding contrasts with some previous research, including Motamedi et al. (2007), who found no significant relationship between maternal employment and depression [9]. However, the protective effect of employment may reflect multiple factors including social support, financial independence, and opportunities for respite from caregiving responsibilities.

The presence of comorbidities in children with intellectual disability demonstrated a strong association with maternal depression, with 68.7% of mothers of children with comorbidities experiencing moderate to severe depression. This finding supports the conclusions of Fatima et al. (2021), who identified presence of comorbidities in children as significantly associated with maternal depression (adjusted prevalence ratio 2.5, 95% CI: 1.4–4.4) [13]. The additional caregiving complexity and uncertainty associated with multiple health conditions likely contribute to increased maternal stress and depression.

Notably, several demographic variables including maternal age, marital status, and child gender showed no significant associations with depression severity in this study. This finding aligns with Kumar et al. (2016), who reported no significant associations between maternal depression and child's age, gender, or maternal age [14]. However, this contrasts with some research suggesting age-related variations in coping capacity and depression vulnerability.

The study's limitations include its cross-sectional design, which prevents causal inference, and the single-center recruitment that may limit generalizability. Additionally, the exclusion of mothers with pre-existing psychiatric conditions, while methodologically sound, may underestimate the true burden of mental health issues in this population. Future longitudinal studies incorporating broader demographic representations and standardized assessment protocols would strengthen the evidence base for developing targeted interventions supporting maternal mental health in families affected by intellectual disability.

CONCLUSION

This study demonstrates a substantial burden of depression among mothers of children with intellectual disability, with the majority experiencing clinically significant depressive symptoms. The severity of the child's intellectual disability and presence of comorbidities emerged as primary predictors of maternal depression. Socioeconomic factors including educational attainment, family income, and employment status showed strong associations with depression severity, highlighting the multifaceted nature of psychological distress in this population. These findings underscore the urgent need for comprehensive mental health screening and support services for mothers caring for children with intellectual disabilities, particularly those from lower socioeconomic backgrounds and caring for children with severe disabilities or multiple comorbidities.

REFERENCES

1. Dogar, I., Azeem, M., Shah, S., Cheema, M., & Asmat, A. (2013). Anxiety and depression among parents of children with mental retardation. *European Psychiatry*, *28*(S1). https://doi.org/10.1016/s0924-9338(13)77482-0
2. Sukhabogi, J. R., Doshi, D., Shwetha, S., Gone, H., Vasavi, K., & Shulamithi, P. (2020). Association between intelligent quotient and oral health conditions among 13–15 year old intellectually disabled children. *International Journal of Adolescent Medicine and Health*, *34*(6), 411-415. https://doi.org/10.1515/ijamh-2020-0121
3. Beighton, C., & Wills, J. (2019). How parents describe the positive aspects of parenting their child who has intellectual disabilities: A systematic review and narrative synthesis. *Journal of Applied Research in Intellectual Disabilities*, *32*(5), 1255-1279. https://doi.org/10.1111/jar.12617
4. Bohadana, G., Morrissey, S., & Paynter, J. (2019). Self-compassion: A novel predictor of stress and quality of life in parents of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *49*(10), 4039-4052. https://doi.org/10.1007/s10803-019-04121-x
5. Wang, H., Hu, X., & Han, Z. R. (2020). Parental stress, involvement, and family quality of life in mothers and fathers of children with autism spectrum disorder in Mainland China: A dyadic analysis. *Research in Developmental Disabilities*, *107*, 103791. https://doi.org/10.1016/j.ridd.2020.103791
6. Giannotti, M., Bonatti, S. M., Tanaka, S., Kojima, H., & De Falco, S. (2021). Parenting stress and social style in mothers and fathers of children with autism spectrum disorder: A cross-cultural investigation in Italy and Japan. *Brain Sciences*, *11*(11), 1419. https://doi.org/10.3390/brainsci11111419
7. Islam, M. S., Rahman, M. M., Ar Rashid, M. H., Abedhan, M. F., Prodhan, M. S., Bashar, M. A., & Uddin, M. N. (2019). Parent's attitude towards their mentally retarded children: A descriptive, cross-sectional, comparative and analytical studyParent's attitude towards their mentally retarded children: A descriptive, cross-sectional, comparative and analytical study. *Scientific Research Journal*, *VII*(V). https://doi.org/10.31364/scirj/v7.i5.2019.p0519654
8. Chandravanshi, G., Sharma, K., Jilowa, C., Meena, P., Jain, M., & Prakash, O. (2017). Prevalence of depression in mothers of

intellectually disabled children: A cross-sectional study. *Medical Journal of Dr. D.Y. Patil University*, *10*(2), 156. https://doi.org/10.4103/0975-2870.202103

9. Motamedi, S. H., Seyednour, R., Noori Khajavi, M., & Afghah, S. (2007). A study in depression levels among mothers of disabled children. *Iranian Rehabilitation Journal*, *5*(1), 3-7. http://irj.uswr.ac.ir/article-1-13-fa.html
10. Olsson, M. B., & Hwang, C. P. (2001). Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research*, *45*(6), 535-543. https://doi.org/10.1046/j.1365-2788.2001.00372.x
11. Masulani-Mwale, C., Kauye, F., Gladstone, M., & Mathanga, D. (2018). Prevalence of psychological distress among parents of children with intellectual disabilities in Malawi. *BMC Psychiatry*, *18*(1). https://doi.org/10.1186/s12888-018-1731-x
12. Fahim, M. (2017). Frequency of Depression in Mothers of Learning-Disabled Children. *Journal of Islamabad Medical & Dental College*, *6*(2), 113-116. https://www.jimdc.org.pk/index.php/JIMDC/article/view/72
13. Fatima, N., Chinnakali, P., Rajaa, S., Menon, V., Mondal, N., & Chandrasekaran, V. (2021). Prevalence of depression and anxiety among mothers of children with neuro-developmental disorders at a tertiary care centre, Puducherry. *Clinical Epidemiology and Global Health*, *11*, 100792. https://doi.org/10.1016/j.cegh.2021.100792
14. Kumar, R., & Lakhiar , M. A. (2016). Frequency and Severity of Depression in Mothers of Cerebral Palsy Children. *Journal of Liaquat University of Medical & Health Sciences*, *15*(03), 147–151. https://doi.org/10.22442/jlumhs.161530483
15. Zaidi, K. A, Rehman, S, Ahmad, F, Danish, S. H, Ahmad F. (2019). Depression Amongst Parents of Children With Intellectual Disability. Pakistan J Med Dent, 8, 70–6.
16. Ahmad, Z., Afnan, Z., Shabir, J., & Ahmad, B. (2022). Level of depression in parents of children with intellectual disabilities in district Swabi, Pakistan. *Journal Riphah College of Rehabilitation Sciences*, *10*(01), 54-58. https://doi.org/10.53389/jrcrs.2022100114