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Depression, Anxiety and Stress in Parents of Children with Disabilities in Bangladesh

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Abstract
The overall well-being of children with disabilities is greatly influenced by parental mental health. The purpose of this study was to assess the prevalence and the severity of depression, anxiety and stress among the parents of children with disabilities in Bangladesh, and to investigate the socio-demographic factors associated with them. A cross-sectional study design was used to collect data from 220 parents at CRP-Savar using the Depression, Anxiety, and Stress Scale (DASS-21). Results indicated that 43.6% of parents had extremely severe anxiety, 43.2% extremely severe depression, and 61.8% severe stress. Significantly more extreme anxiety (62.3%) and extreme depression (63.1%) were observed among female parents as compared to males. The greatest prevalence of extremely severe anxiety (52.9%) and depression (48.6%) was found among families in the lowest income range (10,000–20,000 BDT), which emerged as a major factor of financial strain. The results indicate an urgent requirement for targeted mental health interventions, financial support systems, and culturally appropriate family-centered care programs. Addressing these multisystem challenges necessitated joint efforts of healthcare professionals, policymakers and community organizations to engineer resilience and longer-lasting support structures for affected families.

Keywords: Bangladesh, Depression, Anxiety, Stress, Parents, Children with Disabilities

1 Introduction

1.1 Introduction

"Disability is defined by the World Health Organization (WHO) as an umbrella term encompassing impairments, activity limitations, and participation restrictions." (Saleem, 2020). About 15% of the overall population is

estimated to have a disability globally, with considerable variation across age and geographic regions. UNICEF reports that approximately 10.1% of individuals aged 0-17 years (ages 0-17 years) amongst children and adolescents experience moderate-to-severe disabilities, which amounts to nearly 266 million individuals worldwide (Olusanya et al., 2022). Disability prevalence in Asia, especially in the South Asian countries, is high, with estimates suggesting an average disability prevalence of 8.7% in children 2–4 years old (Alam et al., 2024). Child disability in Bangladesh is a significant public health issue, as studies indicate 3% of children. Studies have shown that functional difficulties exist in children of 2–4 years of age, with more males requiring assistance than females (Rahman et al., 2024). A child's disability affects the family, particularly the parents. Because caregiving presents a unique set of challenges, parents of children with disabilities tend to have much higher levels of depression, anxiety, and stress. For these mothers, the demands of having a child with special needs become a 24/7 occupation, creating continuous psychological strain and often making it hard to find relief from the daily burden of their responsibilities (Turda, 2023).

According to the literature, the global prevalence of depression, anxiety, and stress is remarkably high among parents of children with disabilities, which is significantly higher than that of parents of typically developing children. Reports indicate that significant depressive symptoms can be found in about 66.3% of mothers and 35.4% of fathers of children with intellectual disabilities, while anxiety symptoms can be seen in 91.8% of mothers and 57.6% of fathers (Sharma et al., 2023). The high prevalence of depression, anxiety, and stress among parents of children with disabilities in Asia highlights the challenges they face. Research suggests that many parents are psychologically distressed. In Kazakhstan, for example, 39% of parents suffered from severe depression and 42% reported high anxiety levels (Ahmad et al., 2022). In Tunisia, anxiety affected 70.7% and depression 52% of mothers were more affected (Thabet et al., 2013). Likewise, a study conducted in Sri Lanka found that although primary caregivers of children with invisible disabilities experienced similar levels of distress to parents of typically developing children, they were younger and concerned with their high levels of anxiety (Mohamed & De Silva, 2022).

In Bangladesh, the prevalence of depression, anxiety, and stress among parents of children with disabilities is highly recognized, which represents a huge psychosocial burden. A study among parents of a child with autism found that about 60.35% had a diagnosis of depression or anxiety disorder; 31.7% men had depression and 28.6% men had anxiety (Sajib et al., 2022). It is an important study, another was conducted in Bangladesh, indicating that a large number of mothers have mental health issues 62% of them are under stress, 58% have anxiety and around 63% are under depression (Islam et al., 2024). Different factors lead to certain reasons for parental stress. One of the greatest stressors is the child's health issues, which take considerable time, energy and emotional investment to keep under control. Health issues can mean regular visits to doctors, medication and checking up on the kid constantly to make sure they are okay. This is backbreaking for the parents, who are already exhausted in every sense of the word. Financial stress also adds to the weight of stress, especially for families at the margins. Unlimited access to e-Papers, Websites, and Apps. When money is tight, they are making it is even difficult to afford necessary treatment, medications, and even daily essentials for their children, putting more stress on the shoulders of parents. The demands of day-to-day caregiving can be an added strain, since parents need to manage routine tasks, such as feeding, bathing, administering medications, in addition to providing emotional comfort. For single parents, these challenges are compounded as they shoulder all caregiving without an available partner. Moreover, kids with those unusual behaviors - tantrums, resistance to following directions - can create public embarrassment and stress for the parent. I know how judgment or disapproval of others can make you feel guilty and frustrated (Fong & Ali, 2023). Studies show that mental health (depression, anxiety and stress) has a strong multifactorial impact on parents of children with disabilities. Parents, especially mothers, of children with disabilities such as cerebral palsy, intellectual disabilities or more invisible diagnoses, such as autism spectrum disorder are more likely to have mental health issues. Children with cerebral palsy have multiple medical needs and hospitalizations, which worsen levels of depression, anxiety and stress, leading to moderate to severe degrees of these mental health problems in their caregivers. The parents of children with 4 intellectual disabilities also have high levels of depressive and anxiety symptoms, especially mothers versus fathers, highlighting the gender difference in the burden of caregiving (Sharma et al., 2023). Apart from the demands of caregiving, stress in these parents arises from a lack of social support, which is the same significant predictor of mental health issue with disability mothers (Almheiri et al., 2023). Moreover, the type of disability also influenced the mental health of the

parents; for instance, mothers of children with autism spectrum disorder are more stressed than mothers of children with Down syndrome, which has a significant impact on their quality of life and can lead to social isolation. In an unexpected finding, studies reporting no statistically significant differences in mental health outcomes among caregivers of children with invisible disabilities compared to caregivers of typically developing children found parental age as a predictor of anxiety, indicating that experience may buffer some stressors (Mohamed & De Silva, 2022). 90% of parents of children with disabilities call for targeted interventions and support systems aimed at alleviating the psychological burden on these people and at increasing their quality of life, given that the mental health of parents of children with disabilities is seriously undermined. The psychological impact on parents of people with disabilities, particularly those who are also parents of children with disabilities, is well documented across a spectrum of studies and the profound, multifaceted psychological effect we see reflected in such studies. The stress and anxiety, and depression is even more so for parents who go through the unique challenges. For instance, mothers of children with intellectual disability were shown to report greater levels of stress compared with their peers, with numerous factors including socioeconomic status and the length their child has experienced disability predicting the level of reported stress (Kumari et al., 2025). It brings additional stress and contributes to feelings of isolation and depression coupled with social stigma and absence of social support. Moreover, the continuous treatment of children with disabilities is mentally and physically exhaustive and reduces the mental health status, where parents put their child's needs above themselves and sacrifice their personal and work-related ambitions (Das & Joseph, 2022). If emotional, the psychological burden is also reflected in physical symptoms, with parents also reporting fairly high levels of anxiety and depression, a large percentage of which can be moderately or even severely depressed. But there are ways to counter them. It has been established that psychoeducational programs reduce parental anxiety, and improve parents' knowledge and attitudes related to the management of their children's needs. Moreover, the reduction in anxiety and depression also impacts a balanced mental state and personal development. (Valeriya, 2022). Coping strategies play a significant role too; in general, problem-focused and emotion-focused coping strategies correlate with lower stress and better mental well-being whilst avoidant coping correlates with higher stress (Pachița & Gherguț, 2023).

In conclusion, parents of children with impairments, particularly mothers, experience considerable emotional and psychological burdens as a result of demanding, frequently rumbling caregiving responsibilities. This infrequently studied population is often faced with increased stress, anxiety and depression, exacerbated by financial strain, social stigma, and low social support. The type of disability and the unique situations of the family determine how serious these mental health disorders are. Research shows parents of children with disabilities such as cerebral palsy, autism spectrum disorder and intellectual disabilities are especially at risk. Yet targeted interventions such as psychoeducational initiatives, coping strategies, and a strong support network are clearly important in reducing these difficulties. These interventions can bolster resilience and provide resources that enhance mental health, ultimately improving parents' well-being to better manage their caregiving responsibilities, and enhancing their overall quality of life. Bailin believes parents need to be prepared for their own mental and emotional health needs – along with their children's - at a time like this, something that needs to be addressed.

1.2 Research Question

What is the level of depression, anxiety and stress in parents of children with disabilities in Bangladesh?

1.3 Objectives

1.3.1 General Objective

- To find out depression, anxiety and stress in parents of children with disabilities in Bangladesh

1.3.2 Specific Objective

- To determine the socio-demographic information of patients.
- To determine the prevalence of depression, anxiety and stress in parents of children with disabilities.

- To find out associated factors of depression, anxiety and stress in parents of children with disabilities.

1.4 Literature Review

Mental health conditions such as depression, anxiety and stress are related, and affect individuals and communities around the world. Persistent sadness, loss of interest, and a number of other emotional and physical problems that interfere with normal functioning characterize depression (Delgado et al., 2024). Anxiety means too much worry and fear and also has physical symptoms, for example, a faster heartbeat and sweating (Frolova, 2022).

Depression affects over 264 million people globally and the lifetime prevalence of depression, anxiety, and stress among the young adult population ranges from 5 percent to 70% (Nageswaran & Devi, 2021). Compared with parents of typical children, parents of children with disabilities have significantly higher levels of depression, anxiety, and stress. The psychological distress resulting from the special challenges of raising a child with disabilities, including emotional, financial, educational, social and health issues (Poptean & Popovici, 2022). In terms of the amount of this burden that is carried by mothers, who are often the primary caregiver, as well as those with higher anxiety and depression than fathers (Sharma et al., 2023). These parents suffer from a great psychological impact, with many of them remaining under long-term stress that negatively affects their quality of life and health (Turda, 2023). The effects of acute stress on clinical accuracy are moderated by social support. To diminish anxiety and depression symptoms, improve the state of mental health, participants can attend support groups and get psychological assistance (Xia et al., 2023).

As reported in a study that about 66.3% of mothers and 35.4% of fathers engaging with children with intellectual disabilities presented a statistically significant level of depressive symptoms and about 91.8% of mothers and 57.6% of fathers exhibited statistically significant levels of anxiety symptoms (Sharma et al., 2023). In addition, the lack of sufficient social support aggravates those challenges, since 63% of the variance in mental health problems among mothers of children with special needs is by social support (Almheiri et al., 2023). One in three parents of children with IDD will reach the cut-off for moderate depression, compared to 7% of parents of children without IDD. We also learn from the research that anxiety levels are high among parents as much because they worry about their children's future and their own aging. Parents with disabilities and other parents from low-income households have higher levels of depression and anxiety (Scherer et al., 2019).

Parenting stress showed significant differences across different diagnostic categories: Childhood Diagnoses related to behaviour issues, sleep problems and feeding difficulties. The research revealed that 65% of parents who responded to the Parenting Stress Index (PSI) said they had stress in the child domain, and these particular problems make a significant contribution to the extra stress parents of children with disabilities experience. The neurobiological etiology, stress and family reactance linked to continuous caregiving needs and changes in family dynamics noted by parents of children with developmental disabilities can result in negative outcomes, for example parental depression and family malfunction (Scheibner et al., 2024). Although the child's condition contributes to the stress of the parents, the parents' social support, coping strategy and economic status are also contributing factors (Shin & Kim, 2009). The presence of a child's clinical conditions such as a developmental disorder, behavior issue or chronic illness, is a strong predictor of parental stress (Kwon et al., 2022).

Parents of children with developmental disabilities, such as Down syndrome and motor impairment, are under more stress, a study showed. Longitudinal research suggests that stress among these parents typically rises from early to middle childhood, largely out of the high level of caregiving demands and challenges associated with their child's condition. Transition to adolescence can also intensify stress for these individuals because of social isolation and the requirement of adult services, which can further damage parental wellbeing (Woodman, 2014).
A study also showed that the parents of intellectually challenged children, multi deficiency children or who are autistic had higher levels of depression than the parents of non−disabled children. Therefore, parents of children with disabilities report higher levels of stress, which are associated with age of child and parent education level, as higher stress corresponds to older age among the children and lower level of education among parent (Pocinho & Fernandes, 2018).

From Isfahan, Iran, 70% of parents and caregivers of children with disability suffer from mild to severe depressive symptoms according to this study (Ebrahimi et al., 2021). A study at Bangabandhu Sheikh Mujib Medical University in Dhaka found that 60.35 percent of parents of children with autism had either depressive or anxiety disorders. The most common diagnosis was major depressive disorder, with 31.7% having depressive disorders and 28.6% having anxiety disorders (Sajib et al., 2022). A similar study on caregivers of adolescents with cerebral palsy in rural Bangladesh reported similar mental health problems, but did not provide prevalence rates in the abstract provided (Muhit et al., 2022). The quality of life (QoL) of parents of children with cerebral palsy (CP) in Bangladesh is decreased and depression levels are increased. In the study there was found a strong correlation between the QoL of parents and their physical, psychological, social and environmental health and spastic CP was found to have a relatively better QoL for mild depression than different types of CP (Doly et al., 2024). Caregivers of children with neurodevelopmental disabilities are very significantly affected in their mental health; most of them experience moderate stress levels. Their QoL is negatively influenced by factors like caregiver and their age, perceived stress, and socioeconomic status (Tasnim et al., 2024).

Parental stress levels are also driven by the educational setting of the child concerning mainstream or special schools. According to the research parents of children in special schools have higher stress levels compared to parents in mainstream settings (Pachița & Gherguț, 2023). Longitudinal studies substantiate that mother of children with disabilities are more likely to experience ill health, including musculoskeletal disorders, depression, anxiety, and sleep disorders, including after controlling for pre-existing ill health (Brekke & Alecu, 2023). It also affects parents' professional life. In fact, many parents report quitting their jobs to be able to give full time care to their child with disabilities, increasing the financial strain and decreasing personal fulfillment (Poptean & Popovici, 2022). Depression, anxiety, and stress prevalence among these parents clearly necessitates targeted intervention and support systems that improve their mental health and quality of life (Ahmad et al., 2022). These parents are burdened with caregiving stress, financial burdens and social stigma psychological distress (Dhamodharan, 2024). Many of the stressors and mental health problems faced by parents are multiplied by their financial incapacity and housing and transportation problems. Furthermore, discrimination and societal stigma further add to their already steep mental anxiety, preventing them from taking the right and essential effect for their and their children's wellbeing (Hussain & Raihan, 2022). Especially, financial constraints are directly associated with higher depression levels (because) families with lower incomes are more susceptible to having major mental health difficulties (Millaku & Kraja-Bardhi, 2022). The problem is compounded by poorly designed family and social support systems. Caregivers with increased rates of depression and anxiety are associated with insufficient financial and psychological assistance (Xia et al., 2023).

However, resilience and contextual factors, e.g. having a trusted person to talk to, attending support groups and receiving professional psychological support, has been demonstrated to lessen these effects, and to favor a positive mental health outcome (Flores-Builes et al., 2023). Also, parents with lower rates of depression live in family environments with harmonious relationships and barrier-free settings (Xia et al., 2023). Certainly, social support is one of the key factors that predict and reduce mental health problems, thus the need for targeted intervention and resources in support of those families. Children with disabilities are significantly influenced in terms of depression and anxiety and family dynamics and child development by parental mental health. In studies, (Claudia & Sandu, 2020) show that parents of children with disabilities, especially their mothers demonstrate higher rates of anxiety and depression as compared to parents of typically developing children.

Typically, additional caregiving responsibilities and a lack of good support systems aggravate this psychological distress (Xia et al., 2023). Especially, maternal depression can affect child development negatively and result in impaired bonding, insecure attachment and developmental delay (Rohanachandra, 2021). Interventions like the Healthy Mothers Healthy Families program have been shown to reduce maternal anxiety and depression, and thereby improve maternal well-being as well as child outcomes. They are expensive and often have low uptake. For better family dynamics and child development, the impact study focuses on dealing with both maternal and paternal mental health (Dennis et al., 2023). Parents also greatly need social support to reduce parental stress and associated mental ill health. In resource-limited settings, informal social support provides a critical form of psychological and economic relief (Lakhani et al., 2025). In addition, social support acts as a buffer against

depression, meaning that having more social support by mothers can lower depression even under high stress (Park & Lee, 2022). Psychosocial adjustment in children with disabilities is also improved by social support which reduces parental stress (Adigun et al., 2022). As its mediating role in promoting resilience among parents shows, it is important for better coping mechanisms and overall mental health (Zhao et al., 2021). Raising children with disabilities negatively affects parental mental health outcomes, and specifically depression and anxiety, and these outcomes are different for parents of each gender. There is research to suggest that parents of children with disabilities have higher levels of depression than do parents of non-disabled children. According to an example, a study showed that 54% of mothers of disabled children had mild to severe depression and 18% had moderate to severe depression (Hamamreh et al., 2016).

Mothers in general tend to have greater amounts of stress, anxiety and depression than fathers, as mothers are typically the primary caregivers (Sharma et al., 2023). Not all emotional and social coping strategies, including seeking support and verbalizing problems, reduce maternal stress (Hallberg, 2014). Clearly, severity and age of the child's disability also matter here: Maternal depression and anxiety is higher if demands on the caregiver are more severe and prolonged (Gnanavel, 2019).

Although fathers are less affected than mothers, they too suffer great stress and mental health stresses, which are typically associated with caregiver burden and financial pressures. Lower-income families also report higher parental depression levels (Millaku & Kraja-Bardhi, 2022). These challenges compound the problem and render then even stronger when they are taken in conjunction with inadequate family and financial powers (Xia et al., 2023). The way in which disability is perceived culturally and socially has a great impact on parent experiences. Some culture sees disability positively, for example in the Tswana's tradition, disabilities are regarded as divine gifts (Zhang, 2020). However, in areas such as Southern India, cultural stigmas continue to prevent people from accessing the resources and support services due to which perceptions are slowly fluctuating (Dickinson, 2018). Another study revealed that in Malaysia, cultural beliefs, resource availability and social support affect parental coping strategies, therefore, family-centered medical approaches are needed (Marshall et al., 2019). In urban India, as well, parents commonly explain disabilities in terms of religious or biological causes and toggle between mainstream medicine and alternative therapies (John et al., 2017). Higher social inequalities exacerbate this issue when families in low-income settings are already under social stress and lack of access to social support groups (Ansari & Jahan, 2016). Family-centered interventions in Ireland have helped to increase parental confidence and social connections but uptake is lower in areas of deprivation (McConkey et al., 2023). Besides, their findings show that culturally sensitive interventions ought to be formulated in a manner that targets the distinctive family needs (Sanchez & Wood, 2016). Parental stress needs to be tackled in a multi-pronged way. For example, mindful parenting programs are effective in reducing stress by improving parent-child interactions in an academically demanding culture such as China (Tan et al., 2024).

Multiple evidences from various studies show that the disability of a child in a family leads to poor income and economic stability of the family. In particular, mothers experience a pronounced reduction in labor market participation and earnings, and the effect of the severity of the child's disability is to intensify these effects. Across different contexts, such as Taiwan, Denmark, Norway, where mothers are more likely to cut work hours or leave the labour market to care for their disabled child, this reduction in maternal employment holds (Lin et al., 2023). Earnings also decline for fathers, although generally less so than for mothers. Add to the overall financial burden the extra cost of caring for a disabled child, which can mean a family has a lower standard and raises greater economic hardship (Roddy, 2022). However, there are some families that succeed at maintaining or even increasing their long-run net worth, perhaps because of government support or because they have fewer children and therefore lower costs. However, the presence of a disabled child alters not just the experience of being a parent to a disabled child, but also changes family dynamics, facilitating an increased chance of divorce with reduced fertility, reducing the yield for the next generation. Findings show these policy interventions are needed, like flexible employment options and better disability support payments to ease the financial and emotional pressure faced by families with children with a disability (Roddy, 2022).

Traditional types of therapy such as CBT are less effective than schema therapy which focuses on emotion management and parenting skills (Kim & Kadyrov, 2022). Paternal caregivers suffer from financial stress, social

stigma, and caregiving burdens of which show the needs for holistic support systems (Paster, 2024). Socioeconomic status, parental fatigue and child health problems are the major stress contributors in Malaysia that need psychological and social support from both governmental and non-governmental organizations. Parental stress due to behavioral issues associated with disabilities is often underestimated by healthcare providers, and necessitates family-centered consultations (Scheibner et al., 2024). Also showed that positive self-talk interventions have been successful in reducing parental stress through acceptance and gratitude and are therefore suitable for community-based programs.

Overall, we find that parents of children with disabilities experience much greater levels of stress, anxiety, and depression, and mothers often bear a disproportionate share of the burden. The incidence of these issues is affected by financial strain, lack of social support, perceived cultural stigma, and severity of the child's disability. Parent mental health outcomes may improve with mindful parenting, schema therapy, and family-centered medical approaches. These problems are multi-dimensional and would require healthcare providers, policy makers and community organizations to work together to provide long-term support and resilience for families.

2. Method

2.1 Participants Characteristics

Parents of children with disabilities aged between 2-12 years were used as the sample in this study.

2.2 Sampling Procedure

Purposive sampling was used by the investigator from a population that met the specified inclusion and exclusion criteria

2.2.1 Inclusion Criteria

- Both male and female participants.
- Parents of the children with disabilities
- Age range of children: 2-12 years.

2.2.2 Exclusion Criteria

- Parents of children without disabilities.
- Children whose age range is not between 2-12 years
- Subjects who are unwilling to participate in this study were excluded.

2.3 Sample size

In survey studies, larger samples better represent the population, but typically, researchers were constrained by practical or financial considerations from obtaining them (Hicks, 1999). The equation was according to the sample size –

We know that-

Sample size: $n = \frac{z^2 p(1-p)}{d^2}$

$$\frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2}$$

$$=384$$

So, Sample size 384.

Where,

n= Required sample size,

z = confidence level at 95% (standard value of 1.96),

P= estimated prevalence of subject (0.5)

d = margin of error at 5% (standard value 0.05)

Due to insufficient time and budget, this study was conducted with only 220 participants instead of the planned 384.

2.4 Measures

A structured questionnaire- Depression, Anxiety and Stress Scale (DASS-21) was used as a data collection instrument. The Depression, Anxiety and Stress Scale consists of 21 sets of questions. DASS-21 questionnaire is divided into 3 domains, Anxiety, Depression and Stress. This questionnaire used a Likert scale, and scoring is calculated for each domain. Normal scoring ranged for depression (0-9), anxiety (0-7) and stress (0-14), mild scoring ranged for depression (10-13), anxiety (8-9) and stress (15-18), moderate scoring ranged for depression (14-20), anxiety (10-14) and stress (19-25), severe scoring ranged for depression (21-27), anxiety (15-19) and stress (26-33) and extremely severe ranged for depression (28+), anxiety (20+) and stress (34+). This scoring method was used.

2.5 Study Design

The investigator conducted this study to find out depression, anxiety, and stress in parents of children with disabilities in Bangladesh. The investigator used a quantitative cross-sectional prospective research methodology. Quantitative research is a technique of research that collects numerical information from subjects (Hicks, 1999; Fraenkel & Wallen, 1996).

3 Results

3.1 Gender of the participants

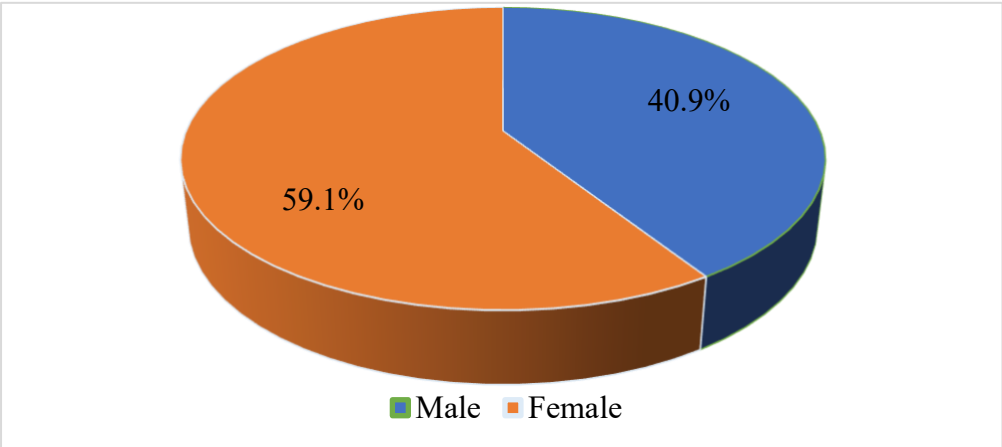

Figure 1: Gender of the Participants

Among 220 participants, the majority of the participants were female 59.1% (130) and male participants were 40.9% (90).

3.2 Age of the Parents

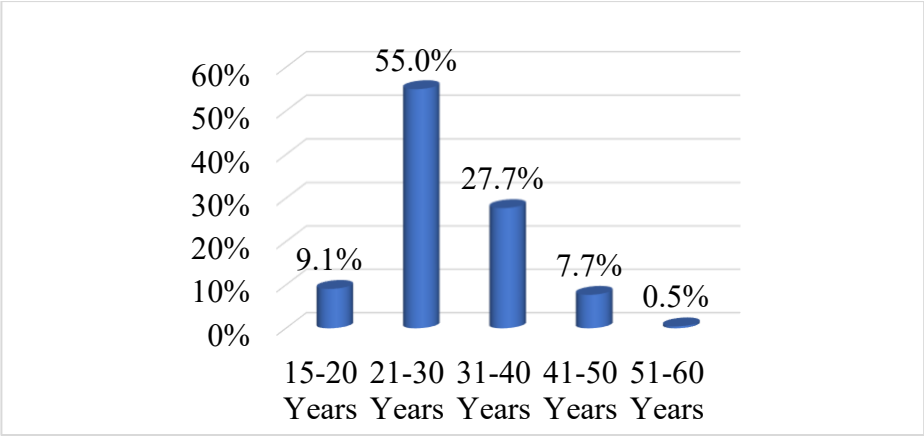

Figure 2: Age of the Parents

In the middle of the 220 participants, the maximum number of participants, age range from (21 to 30) years were 55% (121). It was found that 27.7% (61) were in the age range from (31 to 40) years. Age range from (15 to 20) years were 9.1% (20). It was also found that 7.7%(17) were in the age range from 41 to 50) years and few numbers of participants were 0.5% (1) age ranged from 51-60 years.

3.3 Gender of the Child

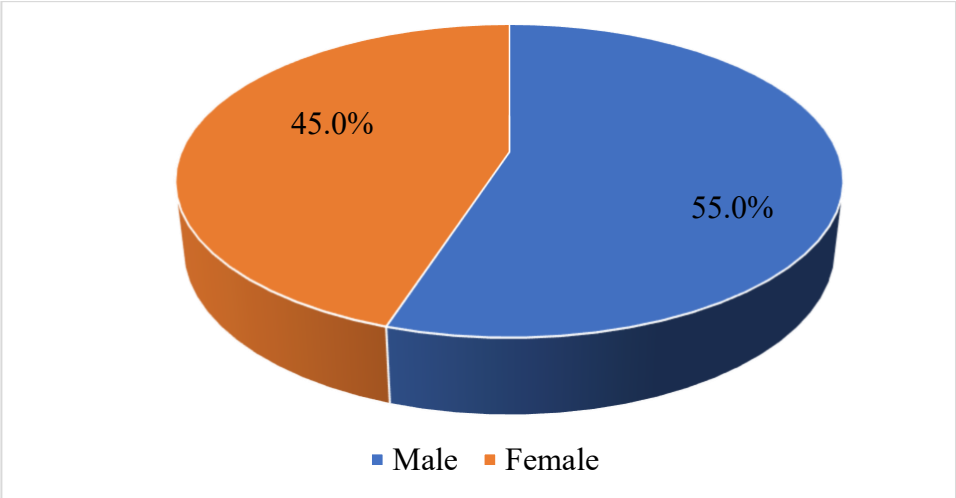

Figure 3: Gender of the Child

Among the child with Disabilities of 220 participants, the majority of the children were male 55% (121) and female were 45% (99).

3.4 Age of the Child

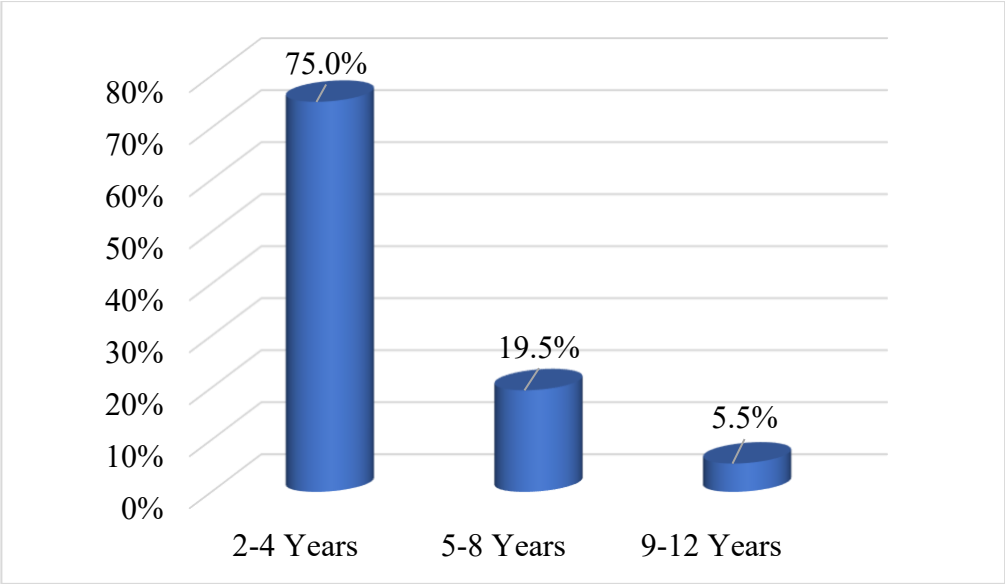

Figure 4: Age of the Child

In the middle of the Child with Disabilities of 220 participants, the maximum number of the child, age range from (2-4) years were 75% (165). It was found that 19.5% (43) were in the age range from (5-8) years and very few numbers of participants were 5.5% (12) age ranged from (9-12) years.

3.5 Diagnosis of the child

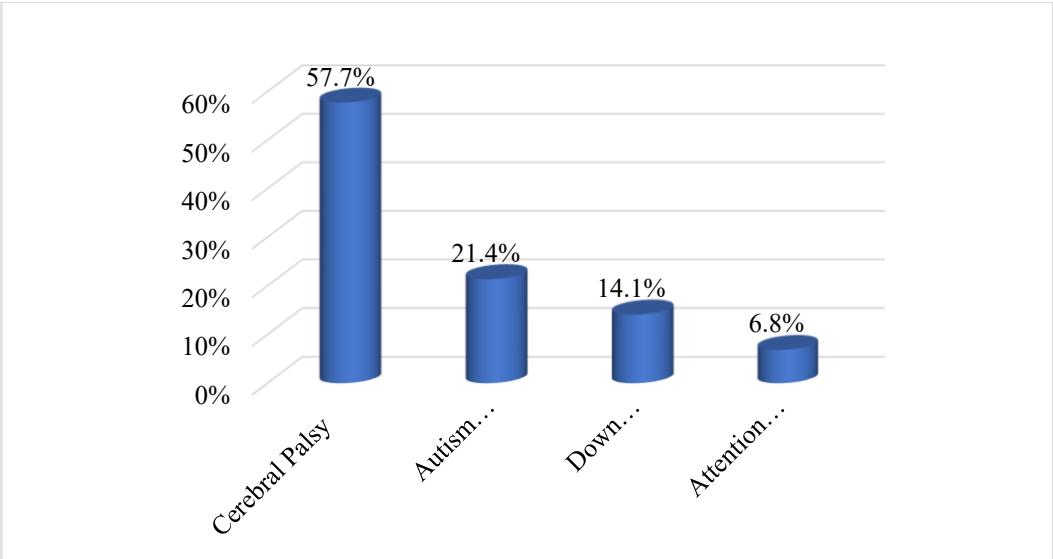

Figure 5: Diagnosis of the child

Among 220 child, 57.7% (127) of children are diagnosed with cerebral palsy and 21.4% (47) of children are diagnosed with Autism Spectrum Disorder, 14.1% (31) of children are diagnosed with down syndrome while only 6.8% (15) of children are diagnosed with Attention Hyperactivity Disorder.

3.6 Educational Qualification

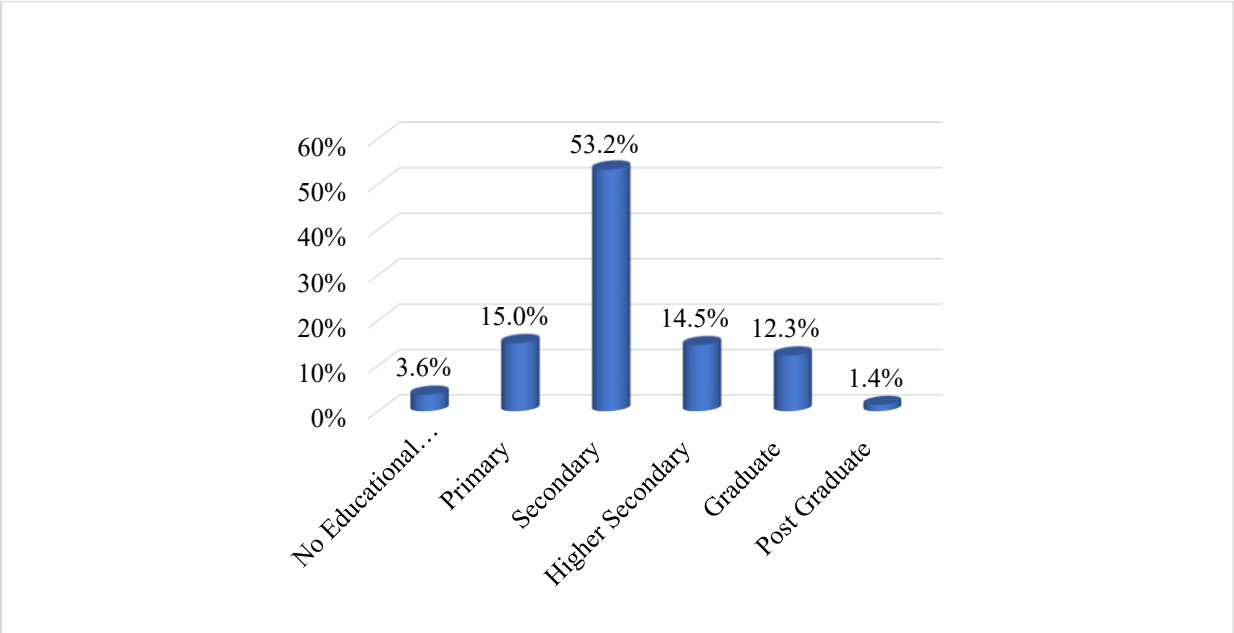

Figure 6: Educational qualification

From 220 participants, the maximum number participants were 53.2% (117) Were secondary. 15.0% (33) of participants education level were primary. Among them only 14.5%% (32) participants education level were Higher secondary. 12.3%% of the participants (27) have completed graduate level. 3.6% of them (8) have no educational qualification. 1.4% (3) of them have post graduate educational qualifications

3.7 Occupation of the participants

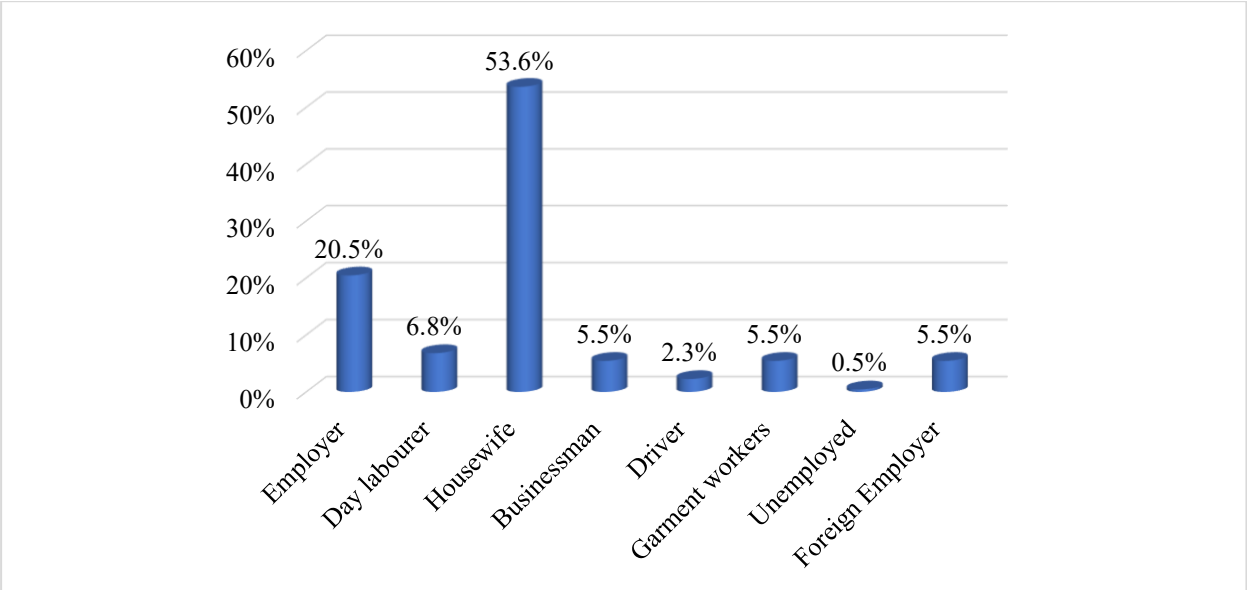

Figure 7: Occupation of the participants

In the group of participants, 20.5% (n=45) were employer. The maximum number participants were 53.6% (n=118) participants were housewife. 5.5% of them were businessman (n=12), Garment workers were 5.5% (n=12), Day labourer were 6.8% (n=15), Driver were 2.3% (n=5), Foreign Employer were 5.5%(n=12). The minimum number participants were 0.5% (n=1) participants were unemployed.

3.8 Monthly income of the family

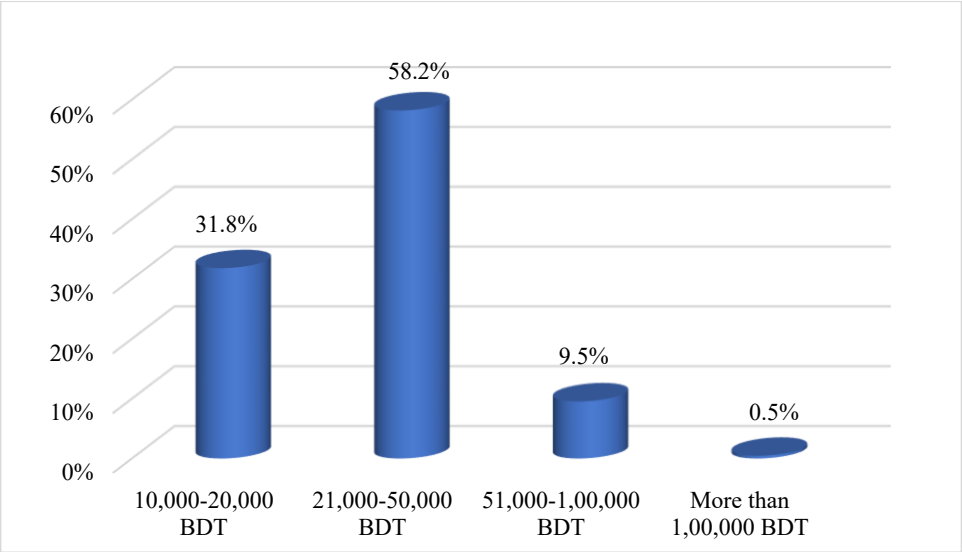

Figure 8: Monthly income of family

The chart demonstrates the distribution of monthly income. The most extensive income range, including 58.2% (128), was between (21000 to 50000) Tk, indicating the most common income category. Subsequently, 9.5% (21) earned between (51000 to 100000) Tk, while 0.5% (1) earned more than 100000 Tk. 31.8% (70) earned between (10000-20000) Tk.

3.9 Number of Family Members of the child

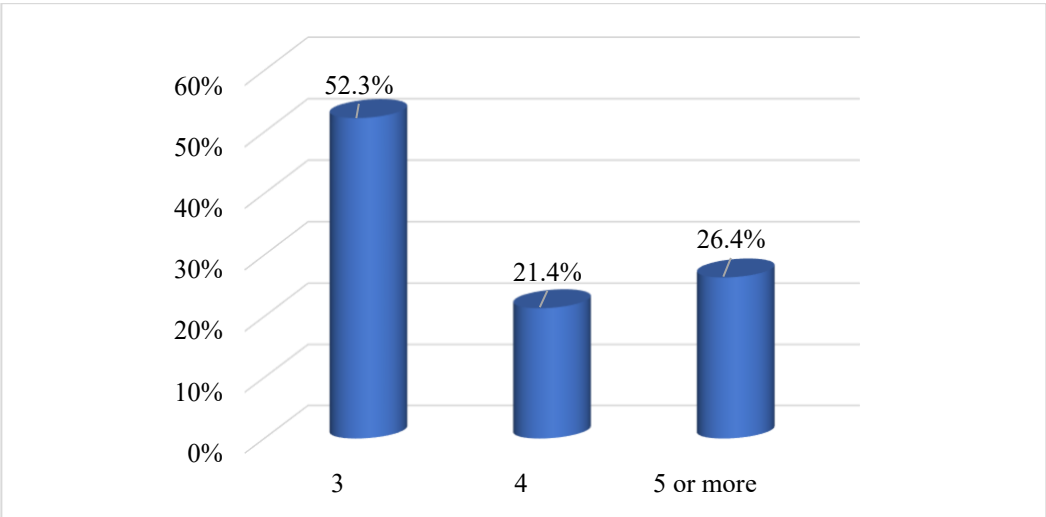

Figure 9: Number of family members of the child

Among 220 child, 52.3% (115) of children have three family members, including themselves, 21.4% (47) of children have four family members including themselves and his/her siblings while 26.4% (58) of children have 5 or more family members including themselves.

3.10 Position of the Child in Siblings

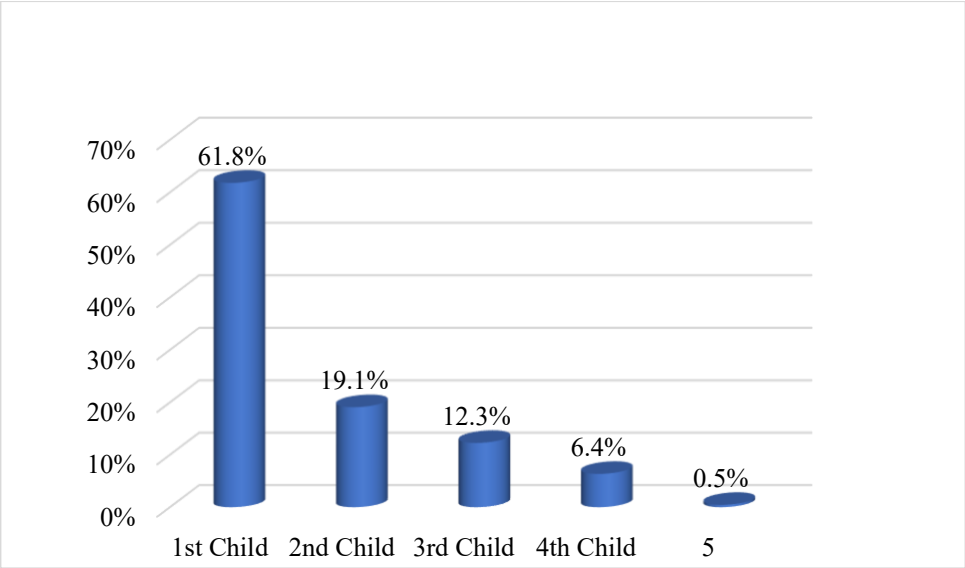

Figure 10: Position of the child in siblings

Among the children with Disabilities of 220 participants, 61.8% (136) parents have their 1st child affected with Disabilities. 19.1% (42) parents have their 2nd child affected with Disabilities and 12.3% (27) parents have their 3rd child affected with Disabilities. 6.4% (14) parents have their 4th child affected with Disabilities and 0.5%(1) parents have their 5th child affected with Disabilities

3.11 Number of disabled children

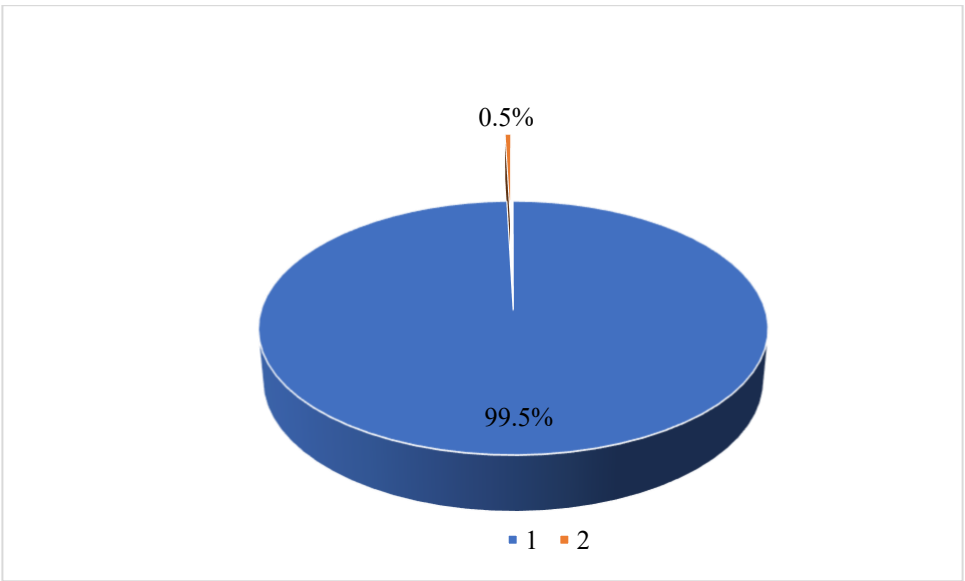

Figure 11: Number of disabled children

Among 220 participants, 99.5% (219) parents have one disabled child where 0.5% (1) parents have two disabled child.

3.12 Carer of the child

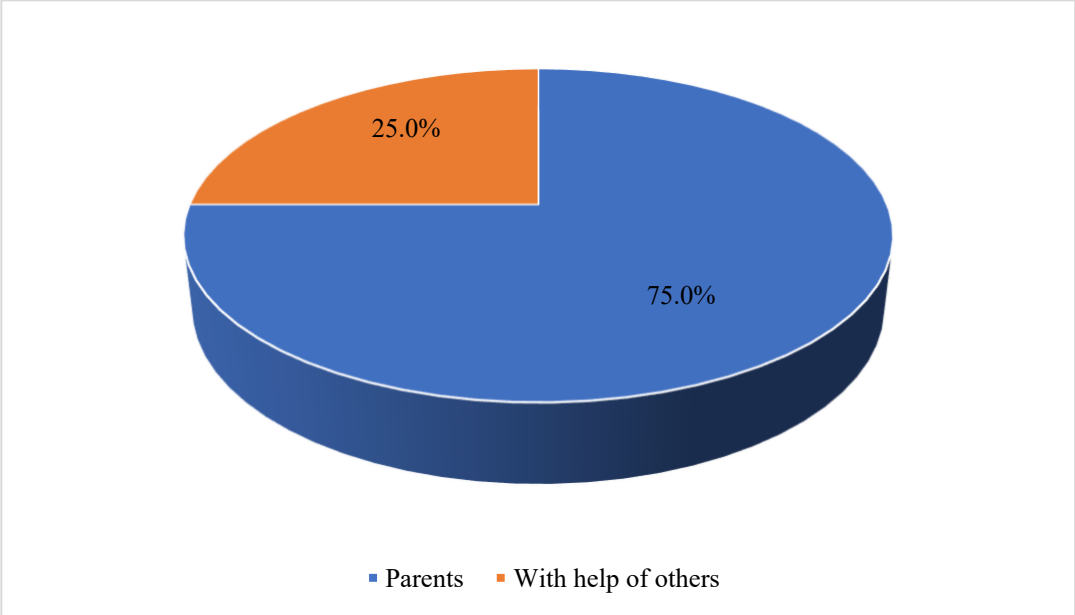

Figure 12: carer of the child

Among 220 participants, 75% (165) of children receive care only from their parents while 25% (55) receive care from both their parents and other family members.

3.13 The severity of anxiety level

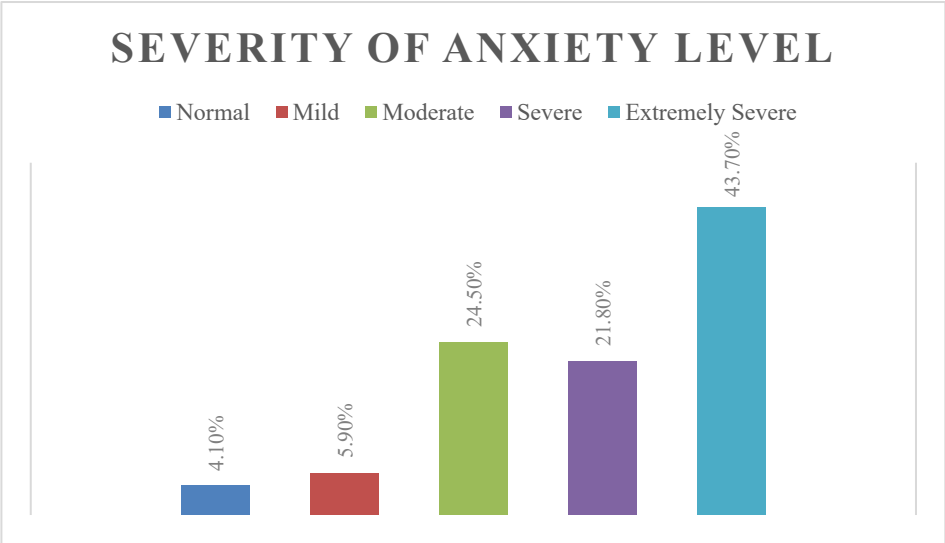

Figure 13: Severity of anxiety level

The majority of participants (61.8%) fall into the severe stress category, indicating that high stress levels are very common in the sample. About 21.4% of participants experience moderate stress. A smaller portion, 12.2%, is experiencing extremely severe stress, suggesting that a notable number of individuals are under very critical stress conditions.

3.14 The severity of depression level

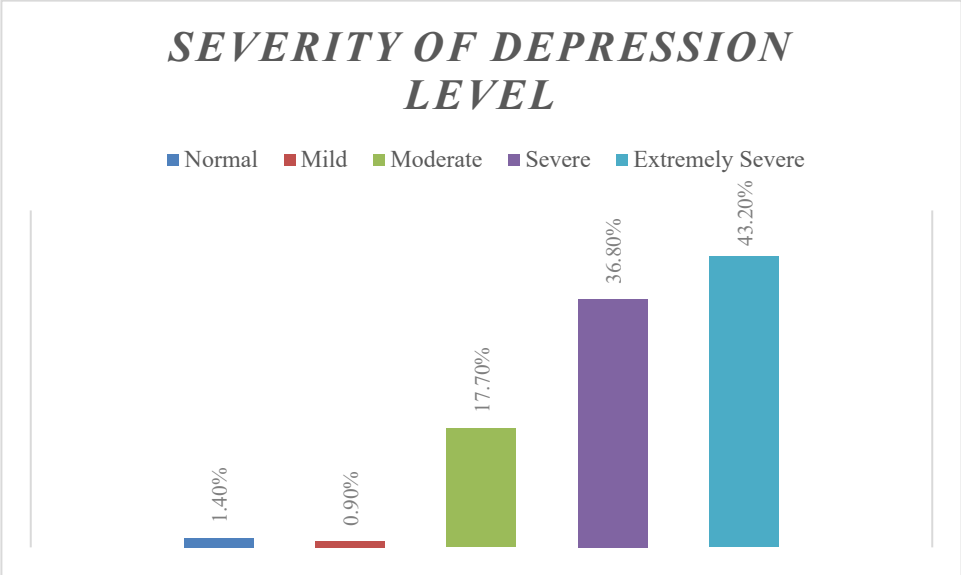

Figure 14: Severity of depression level

The largest proportion (43.2%) of participants fall into the extremely severe depression category, indicating a very high level of depressive symptoms in a significant portion of the sample. 36.8% of participants experience severe depression, which is the second largest group. About 17.7% of participants have moderate depression.

3.15 The severity of the stress level

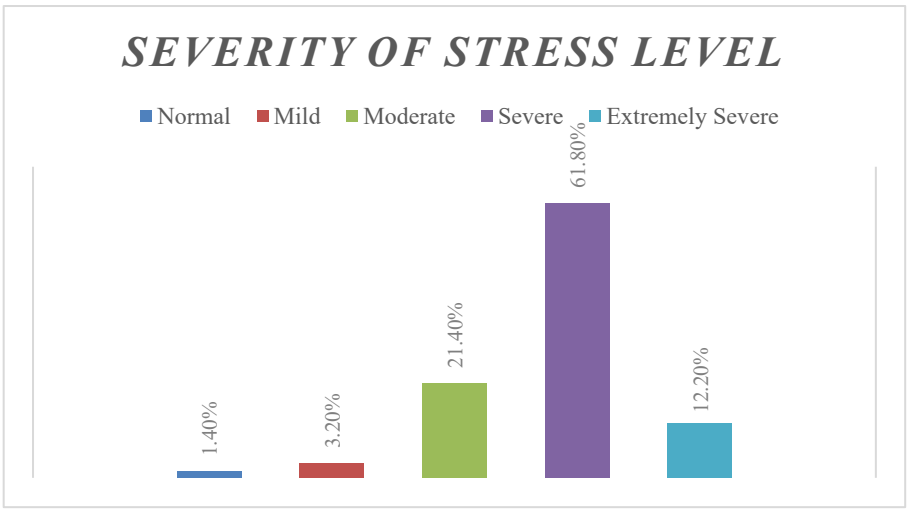

Figure 15: Severity of stress level

Only 1.4% of the participants fall within the normal stress level, while 3.2% experience mild stress. A larger proportion, 21.4%, reports moderate stress. The majority of participants, 61.8%, experience severe stress, which represents the highest category in the distribution. Additionally, 12.2% of participants fall into the extremely severe stress category.

3.16 Association between the gender of parents and the severity of anxiety level

Table 1: Association between the gender of parents and the severity of anxiety level

Gender of Parent	Severity of anxiety level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
Male	8 8.9%	9 10.0%	35 38.9%	23 25.6%	15 16.7%	90 100.0%
Female	1 0.8%	4 3.1%	19 14.6%	25 19.2%	81 62.3%	130 100.0%
Total	9 4.1%	13 5.9%	54 24.5%	48 21.8%	96 43.6%	220 100.0%

3.17 Association between the gender of parents and the severity of depression level

Table 2: Association between the gender of parents and the severity of depression level

Gender of Parent	Severity of depression level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
Male	1 1.1%	1 1.1%	26 28.9%	49 54.4%	13 14.4%	90 100.0%
Female	2 1.5%	1 0.8%	13 10.0%	32 24.6%	82 63.1%	130 100.0%
Total	3 1.4%	2 0.9%	39 17.7%	81 36.8%	95 43.2%	220 100.0%

3.18 Association between the gender of parents and the severity of stress level

Table 3: Association between the gender of parents and the severity of stress level

Gender of Parent	Severity of stress level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
Male	0 0.0%	3 3.3%	27 30.0%	58 64.4%	2 2.2%	90 100.0%
Female	3 2.3%	4 3.1%	20 15.4%	78 60.0%	25 19.2%	130 100.0%
Total	3 1.4%	7 3.2%	47 21.4%	136 61.8%	27 12.3%	220 100.0%

3.19 Association between the monthly income of the family and the severity of anxiety level

Table 4: Association between the monthly income of the family and the severity of anxiety level

Monthly income of family	Severity of anxiety level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
10,000-20,000 BDT	0 0.0%	2 2.9%	18 25.7%	13 18.6%	37 52.9%	70 100.0%
21,000-50,000 BDT	8 6.3%	8 6.3%	27 21.1%	31 24.2%	54 42.2%	128 100.0%

51,000-1,00,000 BDT	1 4.8%	3 14.3%	8 38.1%	4 19.0%	5 23.8%	21 100.0%
More than 1,00,000 BDT	0 0.0%	0 0.0%	1 100.0%	0 0.0%	0 0.0%	1 100.0%
Total	9 4.1%	13 5.9%	54 24.5%	48 21.8%	96 43.6%	220 100.0%

3.20 Association between the monthly income of the family and the severity of depression level

Table 5: Association between the monthly income of the family and the severity of depression level

Monthly income of family	Severity of depression level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
10,000-20,000 BDT	2 2.9%	0 0.0%	9 12.9%	25 35.7%	34 48.6%	70 100.0%
21,000-50,000 BDT	1 0.8%	1 0.8%	24 18.8%	44 34.4%	58 45.3%	128 100.0%
51,000-1,00,000 BDT	0 0.0%	1 4.8%	5 23.8%	12 57.1%	3 14.3%	21 100.0%
More than 1,00,000 BDT	0 0.0%	0 0.0%	1 100.0%	0 0.0%	0 0.0%	1 100.0%
Total	3 1.4%	2 0.9%	39 17.7%	81 36.8%	95 43.2%	220 100.0%

3.21: Association between the monthly income of the family and the severity of stress level

Table 6: Association between the monthly income of the family and the severity of stress level

Monthly income of the family	Severity of stress level					
	Normal	Mild	Moderate	Severe	Extremely Severe	Total
10,000-20,000 BDT	2 2.9%	1 1.4%	13 18.6%	47 67.1%	7 10.0%	70 100.0%
21,000-50,000 BDT	1 0.8%	6 4.7%	24 18.8%	78 60.9%	19 14.8%	128 100.0%
51,000-1,00,000 BDT	0 0.0%	0 0.0%	9 42.9%	11 52.4%	1 4.8%	21 100.0%
More than 1,00,000 BDT	0 0.0%	0 0.0%	1 100.0%	0 0.0%	0 0.0%	1 100.0%
Total	3 1.4%	7 3.2%	47 21.4%	136 61.8%	27 12.3%	220 100.0%

3.22 Association between the number of family members and the severity of anxiety level

Table 7: Association between the number of family members and the severity of anxiety level

Number of family members	Severity of Anxiety level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
3	4 3.5%	3 2.6%	20 17.4%	29 25.2%	59 51.3%	115 100.0%
4	1 2.1%	3 6.4%	20 42.6%	8 17.0%	15 31.9%	47 100.0%
5 or more	4 6.9%	7 12.1%	14 24.1%	11 19.0%	22 37.9%	58 100.0%
Total	9 4.1%	13 5.9%	54 24.5%	48 21.8%	96 43.6%	220 100.0%

3.23 Association between the number of family members and the severity of depression level

Table 8: Association between the number of family members and the severity of depression level

Number of family members	Severity of depression level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
3	0 0.0%	0 0.0%	12 10.4%	45 39.1%	58 50.4%	115 100.0%
4	0 0.0%	0 0.0%	11 23.4%	22 46.8%	14 29.8%	47 100.0%
5 or more	3 5.2%	2 3.4%	16 27.6%	14 24.1%	23 39.7%	58 100.0%
	3 1.4%	2 0.9%	39 17.7%	81 36.8%	95 43.2%	220 100.0%

3.24 Association between the number of family members and the severity of stress level

Table 9: Association between the number of family members and the severity of stress level

Number of family members	Severity of stress level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
3	0 0.0%	2 1.7%	19 16.5%	76 66.1%	18 15.7%	115 100.0%
4	1 2.1%	3 6.4%	8 17.0%	31 66.0%	4 8.5%	47 100.0%
5 or more	2 3.4%	2 3.4%	20 34.5%	29 50.0%	5 8.6%	58 100.0%
Total	3 1.4%	7 3.2%	47 21.4%	136 61.8%	27 12.3%	220 100.0%

3.25 Association between the position of the child and the severity of anxiety level

Table 10: Association between the position of the child and the severity of anxiety level

Position of the Child	Severity of anxiety level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	

1st Child	6 4.4%	4 2.9%	28 20.6%	36 26.5%	62 45.6%	136 100.0%
2nd Child	1 2.4%	4 9.5%	16 38.1%	4 9.5%	17 40.5%	42 100.0%
3rd Child	1 3.7%	3 11.1%	6 22.2%	4 14.8%	13 48.1%	27 100.0%
4th Child	1 7.1%	2 14.3%	4 28.6%	3 21.4%	4 28.6%	14 100.0%
5th Child	0 0.0%	0 0.0%	0 0.0%	1 100.0%	0 0.0%	1 100.0%
Total	9 4.1%	13 5.9%	54 24.5%	48 21.8%	96 43.6%	220 100.0%

3.26 Association between the position of the child and the severity of depression level

Table 11: Association between the position of the child and the severity of depression level

Position of the Child	Severity of depression level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
1st Child	0 0.0%	0 0.0%	20 14.7%	53 39.0%	63 46.3%	136 100.0%
2nd Child	1 2.4%	0 0.0%	7 16.7%	18 42.9%	16 38.1%	42 100.0%
3rd Child	0 0.0%	2 7.4%	6 22.2%	7 25.9%	12 44.4%	27 100.0%
4th Child	2 14.3%	0 0.0%	6 42.9%	3 21.4%	3 21.4%	14 100.0%
5th Child	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 100.0%	1 100.0%
Total	3 1.4%	2 0.9%	39 17.7%	81 36.8%	95 43.2%	220 100.0%

3.27 Association between the position of the child and the severity of the stress level

Table 12: Association between the position of the child and the severity of stress level

Position of the Child	Severity of stress level					Total
	Normal	Mild	Moderate	Severe	Extremely Severe	
1st Child	0 0.0%	3 2.2%	24 17.6%	91 66.9%	18 13.2%	136 100.0%
2nd Child	1 2.4%	2 4.8%	7 16.7%	26 61.9%	6 14.3%	42 100.0%
3rd Child	0 0.0%	2 7.4%	12 44.4%	12 44.4%	1 3.7%	27 100.0%
4th Child	2 14.3%	0 0.0%	4 28.6%	6 42.9%	2 14.3%	14 100.0%
5th Child	0 0.0%	0 0.0%	0 0.0%	1 100.0%	0 0.0%	1 100.0%
Total	3 1.4%	7 3.2%	47 21.4%	136 61.8%	27 12.3%	220 100.0%

4. Discussion

Of the 220 participants, 130 (59.1%) were female, and 90 (40.9%) were male. We found that 9 (10%) male participants and 4 (3.1%) female participants experienced mild anxiety, whereas 35 (38.9%) male participants and 19 (14.6%) female participants had moderate anxiety. 25.6% (23) of males and 19.2% (25) of females reported severe anxiety and 16.7% (15) of males and 62.3% (81) of females extremely severe anxiety. Furthermore, 8.9% (8) of males and 0.8% (1) of females stated no symptoms of anxiety. We find that male parents are predominantly in the moderate anxiety group, but female parents have a much higher percentage in the extremely severe anxiety group.

Regarding the levels of depression, 1.1% (1) of the males and 0.8% (1) of the females were mildly depressed, 28.9% (26) of the males and 10% (13) of the females were moderately depressed. Severe depression was reported for 54.4% (49) of males and 24.6% (32) of females, amongst whom 14.4% (13) of males and 63.1% (82) of females had extremely severe depression. Additionally, 1.1% (1) of males and 1.5% (2) of females did not suffer from depression. Severe depression is more common in male parents, while extremely severe depression is disproportionately common in female parents. In terms of stress, 3.3% (3) of males and 3.1% (4) of females stated they had mild stress, but 30% (27) of males and 15.4% (20) of females had moderate stress. Among males, 64.4% (58) reported severe stress and 2.2% (2) reported extremely severe stress, while 60% (78) of females reported severe stress and 19.2% (25) reported extremely severe stress. Of note is that 0% (0) males and 2.3% (3) females did not experience stress. The findings show that male parents had a higher percentage in the severe stress category than female parents, who had a more balanced distribution of severe and extremely severe stress levels.

Previous research indicates that parents of children with disabilities are at higher risk of depression and anxiety, and supports these findings. For example, 57.6% of fathers and 91.8% of mothers of children with intellectual disabilities report significant anxiety symptoms, and 35.4% of fathers and 66.3% of mothers report significant depressive symptoms (Sharma et al., 2023). This study is consistent with these results, in which female parents had higher prevalence rates of anxiety, depression, and stress than male parents, which is similar to various studies and was statistically significant. (x^2= 52.013, df= 4, $p<0.05$), (x^2= 52.824, df= 4, $p<0.05$) & (x^2= 20.111, df= 4, $p<0.05$).

Additionally, this study investigated the relationship between monthly family income and the prevalence of anxiety, depression, and stress. Out of the participants, 70 (31.8%) had a monthly income of 10,000–20,000 BDT, 128 (58.2%) had a monthly income of 21,000–50,000 BDT, 21 (9.5%) had a monthly income of 51,000–100,000 BDT, and 1 (0.5%) had a monthly income of more than 100,000 BDT. In all income groups, 4.1% (9) had normal anxiety, 5.9% (13) mild anxiety, 24.5% (54) moderate anxiety, 21.8% (48) severe anxiety, and 43.6% (96) extreme severe anxiety. The prevalence of extremely severe anxiety was higher in lower income groups (10,000–20,000 BDT) than in higher income groups, and relatively lower in higher income groups.

Likewise, depression level across income groups was 1.4% (3) with normal depression, 0.9% (2) with mild depression, 17.7% (39) with moderate depression, 36.8% (81) with severe depression, and 43.2% (95) with extremely severe depression. As in the case of moderate to severe depression, lower income groups (particularly those earning 10,000–20,000 BDT) had a higher prevalence of severe and extremely severe depression, but higher income groups had more varied patterns across different severity levels. This is supported by other studies (Millaku & Kraja-Bardhi, 2022). where other studies confirm that financial strain significantly contributes to parental depression, and families in lower income brackets face larger depressive symptoms. Similar trends were seen across groups by income, with 1.4% (3) in the normal stress group, 3.2% (7) in the mild stress group, 21.4% (47) in the moderate stress group, 61.8% (136) in the severe stress group, and 12.3% (27) in the extremely severe stress group. Families with lower income, especially those with incomes between 10,000 and 20,000 BDT, had the highest prevalence of severe and extremely severe stress. The studies found financial strain and limited access to resources were the key factors which aggravated the stress levels among parents of their children with disabilities (Suganya & Balakrishnan, 2022).

This study found anxiety, depression and stress didn't vary significantly with the monthly income of the families which was not similar to various studies and was statistically non-significant. (x^2= 17.340, df= 12, p>0.05), (x^2= 19.182, df= 12, p>0.05) & (x^2= 15.482, df= 12, p>0.05).

Prevalence of anxiety, depression, and stress varied according to family size as well. Of the participants, 52.3% (115) of the children came from families of three members, 21.4% (47) from four members, and 26.4% (58) from five or more members. The highest percentages of extremely severe anxiety (43.6% (96)), extremely severe depression (43.2% (95)), and severe stress (61.8% (136)) were seen in families with three members. On the other hand, families with five or more members were more evenly distributed across the moderate and severe stress levels. According to studies, shared caregiving responsibilities might help mitigate the stress of looking after kids for bigger families (Singh et al., 2023), but the same might come at a financial and logistic price (Xia et al., 2023). This study found anxiety, depression and stress varied significantly with the number of family members which was similar to various studies and was statistically significant. (x^2= 20.921, df= 8, p<0.05), (x^2= 28.945, df= 8, p<0.05) & (x^2= 16.268, df= 8, p<0.05)

Finally, the child's position in the family was also found to be significantly associated with anxiety, depression and stress levels. Of the participants, 136 (61.8%) had their first child affected by disabilities, 42 (19.1%) had their second child affected, 27 (12.3%) had their third child affected, 14 (6.4%) had their fourth child affected and 1 (0.5%) had their fifth child affected. The highest percentages of extremely severe anxiety (43.6% (96)), extremely severe depression (43.2% (95), and severe stress (61.8% (136)) were reported by parents of first-born children. This finding is supported by previous research, which shows that parents of firstborn children experience higher psychological distress as a result of long-term care giving demands and worries about their child's future (Pocinho & Fernandes, 2018). This study concludes that female parents, lower income families, smaller family units, and parents of firstborn children are at greatest risk for severe psychological distress. These findings support other research and highlight the requirement which was similar to various studies and was statistically significant. (x^2= 20.198, df= 16, p>0.05), (x^2= 45.774, df= 16, p<0.05) & (x^2= 35.992, df= 16, p<0.05).

5 Conclusion

This study investigated how prevalent and how severe depression, anxiety and stress are in parents of children with disabilities in Bangladesh. Results showed that 43.6% of parents had extremely severe anxiety, 43.2% had extremely severe depression and 61.8% had severe stress. In comparison to male parents, female parents had higher levels of extremely severe anxiety (62.3%) and depression (63.1%). For lower income families, those with incomes between 10,000–20,000 BDT, showed high rates of severe anxiety (18.6%) and very severe depression (48.6%). Furthermore, 45.6% of parents of firstborn children with disabilities experienced extremely severe anxiety and 46.3% experienced extremely severe depression. The urgency of creating structured mental health support systems (such as counseling, financial assistance and caregiver friendly policies) is spelled out by these findings. Parental educational programs also should include stress management and coping strategy instruction. Further longitudinal research is also suggested to validate these findings and inform evidence based interventions that are culturally and socioeconomically relevant to Bangladesh. Efforts to improve the mental well being of these parents and care they give their children depend on collaborative efforts by healthcare professionals, policymakers and community support services.

Author Contributions: "Conceptualization, N.P. and M.H.M.; Methodology, N.P., M.H.M. and F.A.; Software, N.P., M.H.M. and F.A; Validation, N.P., M.H.M. and F.A; Formal Analysis, N.P., M.H.M. and F.A; Investigation, N.P., M.H.M. and F.A; Resources, N.P., M.H.M. and F.A; Data Curation, N.P. and M.H.M.; Writing – Original Draft Preparation, N.P., M.H.M. and F.A.; Writing – Review & Editing, N.P., M.H.M. and F.A.; Visualization, N.P., M.H.M. and F.A.; Supervision, N.P.; Project Administration, X.X.;"

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Conflicts of Interest: The authors declare no conflict of interest.

Informed Consent Statement/Ethics approval: The investigation conformed with the institutional review board (IRB) declaration of the Bangladesh Health Professions Institute (BHPI). The participants' voluntary participation was considered. A documented consent form was distributed to the participants. From the participant's, written authorization was obtained for the investigator to conduct the research. The participants were verbally apprised of the study's objectives and aim, and the study did not cause any physical or mental harm to them.

Data Availability Statement: The data supporting the findings of this study are available from the corresponding author upon request.

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Declaration of Generative AI and AI-assisted Technologies: This study has not used any generative AI tools or technologies in the preparation of this manuscript.

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