Original Article

Predictors of COVID-19 Related Challenges Faced by Children in a Rural Area of Khulna, Bangladesh

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Abstract

Background: *The COVID-19 pandemic disrupted education, socio-economic stability, and psychological well-being worldwide. In Bangladesh, children living in rural areas experienced disproportionate adversities. The objective of this study is to identify the predictors of COVID-19 related challenges faced by children in Dumuria, Khulna.* ***Materials and Methods:*** *A cross-sectional descriptive study was conducted among 350 children aged 5-18 years selected through purposive sampling in Gutudia village, Dumuria Upazila, Khulna. A semi-structured questionnaire was used to collect the data.* ***Results:*** *The age distribution revealed that the largest proportion 141 (40.3%) belonged to the 10-13 year group. Males comprised more than half of the study population, accounting for 54.3% (n=190) of the participants. After the pandemic 300 (85.7%) children returned to school, while 50 (14.3%) did not. Economic vulnerability appeared to play a critical role, as 144 (41.0%) of families reported a monthly income below 10,000 BDT. Mental health challenges were also prominent, with 220 (62.9%) participants reporting depressive symptoms during the pandemic. Early marriage was reported by 26 (7.4%) participants, more prevalent among females 20 (12.5%) than males 6 (3.2%) and this association was statistically significant (p<0.05). Parental migration for work was reported by 209 (59.7%) respondents, potentially contributing to weakened supervision, economic strain and increased psychosocial vulnerability. A strong association was found between monthly family income and restarting schooling (p<0.05). Children from low-income families (below 10,000 BDT) were significantly less likely to return to school, while those from families earning 21,000-40,000 BDT demonstrated the highest re-schooling rates 25 (86.2%).* ***Conclusion:*** *The pandemic severely affected rural children in terms of education, early marriage risk and mental well-being. Lower-income families and adolescents were disproportionately affected.*

Keywords: COVID-19 pandemic, children, predictors, rural Bangladesh.
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Introduction

Former infectious disease outbreaks have had a significant impact on people's mental health, in addition to the expected physical health outcomes[1]. The novel coronavirus disease (COVID-19) is by far the most concerning atypical pneumonia outbreak since the far less severe 2003 SARS outbreak[2]. The World Health Organization (WHO) has declared the COVID-19 pandemic an international public health emergency[3]. As of 1 July 2020, the COVID-19 pandemic had infected over ten million people worldwide, killing over 500,000 people[4]. Experts are still unsure about the COVID-19 pandemic's trajectory, the projected number of cases and deaths and the extent to which quarantine measures will disrupt daily life. The unpredictable nature of this situation, as well as the uncertainty surrounding COVID-19, can frequently result in psychological distress and mental illness, such as depression, anxiety and traumatic stress[5]. According to a recent survey conducted by the Indian Psychiatric Society, there has been a 20% increase in mental illnesses in India since the coronavirus outbreak[6]. The COVID-19 situation in Bangladesh is deteriorating by the day. In an effort to contain the outbreak, the government of Bangladesh closed all educational institutions as well as public and private offices on March 16, 2020. According to recent research, mental health during the COVID-19 pandemic is linked to gender, socioeconomic status, occupation having COVID-19-like symptoms, perceptions of COVID-19 impacts, interpersonal conflicts, social media use and social support. Individuals with low incomes and older adults are more likely to have poor mental health[7].

The ongoing COVID-19 pandemic has exacerbated Bangladesh's already severe child marriage problem. We intend to provide a brief overview of the current state of underage marriage in Bangladesh based on available information and to highlight concerns. As a result of pandemic-forced long-term school closures across the country, child marriage has increased by at least 13%, with many cases going unreported[8]. The primary motivators for such

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a high rate of child marriage are the worsening of the financial crisis, the prolonged closure of educational institutions, and social insecurity. We urge the government and local governments to address the current situation by coordinating and integrating efforts to combat the early marriage crisis in Bangladesh[9].

Monthly family income is one of the strongest socio-economic indicators influencing educational opportunities and accessibility for children. High-income families generally possess greater financial flexibility to support learning during school closures through access to the internet, digital devices, private tutoring and stable home environments. In contrast, low-income families often face economic instability, job losses, food insecurity and increased family responsibilities for children[5]. During the epidemic, many children from low-income families were forced to work as domestic helpers or engage in income-generating activities, which made it more difficult for them to return to school even once classes resumed. As schools reopened, gaps in attendance, readiness and continued schooling became more apparent. Students from economically disadvantaged backgrounds were more likely to delay returning to school, attending irregularly or dropping out altogether. On the other hand, children from higher-income families demonstrated higher rates of restart and smoother transition back to academic routines[10]. These differences highlight the importance of examining how financial capacity affects educational restarting after a major crisis like the COVID-19 pandemic.

Understanding these impacts in rural settings is crucial for designing interventions. This study aims to identify the predictors of COVID-19 related challenges faced by children in Dumuria, Khulna.

Materials and Methods

Study Design: Cross-sectional descriptive study. ***Study Area:*** Gutudia village, Dumuria Upazila, Khulna. ***Study Period:*** 10 October 2022 - 30 October 2022. ***Study Population:*** Children aged 5-18 years residing in the selected area. ***Sample Size:*** 350 participants. ***Sampling Technique:*** Purposive sampling. ***Research Instrument:*** Semi-structured questionnaire. ***Inclusion Criteria:*** Children aged 5-18 years who are permanent residents of Gutudia village, were present during data collection, whose parents or guardians provided informed consent, and who were able to understand and respond to the study questions. ***Exclusion Criteria:*** Children younger than 5 years or older than 18 years, non-residents or temporary visitors, and those unwilling to participate or whose parents or guardians did not provide consent. ***Ethical Issues:*** Ethical approval was obtained during the period of RFST survey from the Department of Community Medicine at Ad-din Akij Medical College, Khulna. The nature and purpose of the study were explained in detail to all participants. Informed consent was obtained from the participants.

Results

The study included 350 participants aged 5 to 18 years. Among them, 91 (26.0%) belonged to the 5-9 year age group, 141 (40.3%) were aged 10-13 years and 118 (33.7%) were between 14-18 years, with a mean age of 11.84 ± 3.46 years. More than half of the participants were male 190 (54.3%), while 160 (45.7%) were female. A large majority 300 (85.7%) had returned to school after the COVID-19 pandemic, whereas 50 (14.3%) had not. Regarding early marriage, 26 (7.4%) of participants experienced marriage before 18 years of age. During the COVID-19 pandemic, a considerable proportion, 220 (62.9%), reported feeling depressed. Concerning household income, 177 (50.6%) belonged to the 11,000-20,000 taka income group, while 144 (41.1%) had income below 10,000 taka. The mean monthly household income was 12,422.86 ± 5,654.98 taka. Regarding parental characteristics, 141 (40.3%) reported that their parents had a job, while 209 (59.7%) did not. Additionally, 209 (59.7%) reported that their parents had migrated to urban areas for work (Figure-1, Table-I).

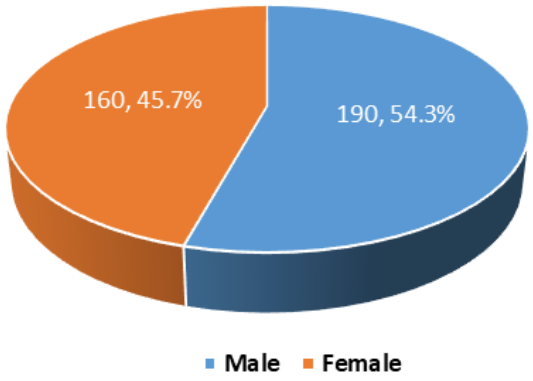

Figure-1: Gender Distribution of the Study Participants (n=350)

Early marriage was significantly higher among females (12.5%) compared to males (3.2%). The chi-square value indicates a statistically significant association between gender and early marriage ($p < 0.05$) (Table-II). School dropout was highest among children from families earning below 10,000 taka (78.5%). The chi-square value indicates a statistically significant association between monthly income and restarting schooling ($p < 0.05$), showing that children from lower-income families were more likely to drop out (Table-III).

Table-I: Distribution of Participants by Key Characteristics (n = 350)

Variable	Category	Frequency (n)	Percentage (%)
Age (Years)	5-9	91	26.0
	10-13	141	40.3
	14-18	118	33.7
Restarted Schooling After COVID-19	Yes	300	85.7
	No	50	14.3
Early Marriage (<18 years)	Yes	26	7.4
	No	324	92.6
Feeling Depressed During COVID-19	Yes	220	62.9
	No	130	37.1
Household Income (BDT)	Below 10,000	144	41.1
	11,000-20,000	177	50.6
	21,000-40,000	29	8.3
Parents Had Jobs	Yes	141	40.3
	No	209	59.7
Parents Migrated for Urban Work	Yes	209	59.7
	No	141	40.3

Table-II: Association between early marriage and gender of the participants

Gender	Early Marriage Yes n (%)	Early Marriage No n (%)	Total n (%)
Male	6 (3.2%)	184 (96.8%)	190 (100.0%)
Female	20 (12.5%)	140 (87.5%)	160 (100.0%)
Total	**26 (7.4%)**	**324 (92.6%)**	**350 (100.0%)**

$\chi^2 = 11.0$; $p < 0.05$

Table-III: Association between restarting schooling and monthly family income

Monthly Income (BDT)	Re-schooling Yes n (%)	Re-schooling No n (%)	Total n (%)
Below 10,000	31 (21.5%)	113 (78.5%)	144 (100.0%)
11,000-20,000	75 (42.4%)	102 (57.6%)	177 (100.0%)
21,000-40,000	25 (86.2%)	4 (13.8%)	29 (100.0%)
Total	**144 (41.1%)**	**206 (58.9%)**	**350 (100.0%)**

$\chi^2 = 31.1$; $p < 0.05$

Discussion

This descriptive cross-sectional study was conducted to identify the predictors of COVID-19 related challenges faced by children in Dumuria, Khulna, Bangladesh. Data were collected from Gutudia village, Dumuria Upazila, Khulna. In total 350 purposively selected children aged 5-18 years were taken as the study sample.

The age distribution of participants showed a relatively even spread across childhood and adolescence, with the largest proportion 141 (40.3%) belonging to the 10-13 year age group. This showed a typical school-going population in Bangladesh. Slightly more than half of the students were male 190 (54.3%), which is consistent with several community-based child and adolescent studies where male respondents tend to be more represented due to greater accessibility and mobility within the families[11].

An important finding was that 300 (85.7%) of participants had returned to school after the COVID-19 pandemic, although 50 (14.3%) had not. School closures during the pandemic severely affected education worldwide and Bangladesh was among the countries with the longest school shutdowns. The percentage of students who did not return to school indicates continued difficulties with education, which may be related to financial difficulties, social pressures such as early marriage[12,13]. This is further supported by the income distribution of families, where over 144 (41.0%) of families earned below 10,000 BDT per month, indicating significant economic vulnerability.

Mental health concerns emerged prominently, as 220 (62.9%) of participants reported feeling depressed during the pandemic. This was consistent with both local and foreign research showing that children experienced emotional discomfort as a result of prolonged confinement, uncertainty, disruptions to their education and fewer social interactions[5].

The study also found that 26 (7.4%) of participants experienced early marriage which is lower than national estimates for rural areas but comparable with national patterns of child marriage. However, the distribution by gender reveals an obvious gap: (20) 12.5% of females experienced early marriage compared to only 6 (3.2%) of males. This association was statistically significant ($p < 0.05$), highlighting the gendered nature of early marriage in Bangladesh. Girls continue to face cultural, economic and social pressures that place them at higher risk of early marriage, often leading to school dropout, health complications and restricted life opportunities[14,15].

A significant proportion of participants 209 (59.7%) reported that their parents had migrated to urban areas for work, which could lead to unstable family structures, less supervision and more financial hardship on households. This context may partially explain both the early marriage rates among girls and the low re-schooling rates among economically disadvantaged children[16]. The association between monthly family income and restarting schooling was strongly significant ($p<0.05$). Children from families earning below 10,000 BDT were the least likely to return to school, with 113 (78.5%) failing to restart. This finding reinforces the well-established link between poverty and school dropout, where financial pressures often force children into income-generating activities or domestic responsibilities[17-19]. Conversely, families earning between 21,000 and 40,000 BDT demonstrated the highest re-schooling rates 25 (86.2%), indicating that economic stability is a protective factor for educational continuity.

When combined, these results showed how socioeconomic hardship, gender disparity, parental migration and educational possibilities interact in a complex way. Children and teenagers had experienced significant psychological difficulties both during and after the pandemic, as evidenced by the high prevalence of depressive symptoms[20]. Multifaceted interventions are needed to address these problems, such as financial support for low-income families, community education campaigns on early marriage, enhanced school re-engagement programs and easily available mental health care for youth.

Conclusion

The COVID-19 pandemic severely affected children in rural Bangladesh through educational disruption, increased financial hardship, mental health challenges and heightened risk of early marriage. Family income was significantly related to school dropouts, while early marriage was more common among girls. Comprehensive multi-sectoral interventions are necessary to address the lingering effects on children's well-being.

Recommendations

Strengthening school re-enrollment programs for children from low-income families, providing mental health support through school counselors and community clinics, increasing awareness to prevent early marriage, offering economic support to affected families, training teachers and community health workers to identify children at risk and ensuring access to digital learning during future emergencies.

Conflicts of interest

The authors declared that they have no conflicts of interest.

References

1. Nikolopoulou GB, Maltezou HC. COVID-19 in Children: Where do we Stand? Arch Med Res. 2022; 53 (1): 1-8. doi: 10.1016/j.arcmed.2021.07.002.
2. Gupta S, Jawanda MK. The impact of COVID-19 on children. Acta Paediatr. 2020; 109 (11): 2181-3. doi: 10.1111/apa.15484.
3. Jebril N. World Health Organization declared a pandemic public health menace: a systematic review of the coronavirus disease 2019 "COVID-19". 2020. doi: http://dx.doi.org/10.2139/ssrn.3566298.
4. Pitlik SD. COVID-19 Compared to Other Pandemic Diseases. Rambam Maimonides Med J. 2020; 11 (3): e0027. doi: 10.5041/RMMJ.10418.
5. Dip RI, Khan MK, Deepro AS. Impact of COVID-19 Pandemic on Family Life of Undergraduate and Postgraduate Medical Students. Mymensingh Med J. 2023; 32 (2): 527-33.
6. Grover S, Sahoo S, Mehra A, Avasthi A, Tripathi A, Subramanyan A, et al. Psychological impact of COVID-19 lockdown: An online survey from India. Indian J Psychiatry. 2020; 62 (4): 354-62. doi: 10.4103/psychiatry.IndianJPsychiatry_427_20.
7. Banna MHA, Sayeed A, Kundu S, Christopher E, Hasan MT, Begum MR, et al. The impact of the COVID-19 pandemic on the mental health of the adult population in Bangladesh: a nationwide cross-sectional study. Int J Environ Health Res. 2022; 32 (4): 850-61. doi: 10.1080/09603123.2020.1802409.
8. Yukich J, Worges M, Gage AJ, Hotchkiss DR, Preaux A, Murray C, et al. Projecting the Impact of the COVID-19 Pandemic on Child Marriage. J Adolesc Health. 2021; 69 (6S): S23-S30. doi: 10.1016/j.jadohealth.2021.07.037.

9. Mahtab N, Fariha TN. Pandemic within a pandemic: Gendered impact of COVID-19 in Bangladesh with a focus on child marriage and domestic violence. In: Understanding post-COVID-19 social and cultural realities: Global context. Singapore. 2022. pp 199-226.
10. Breslin T. Schooling during lockdown: experiences, legacies, and implications. In: Pandemic pedagogies. London: Routledge; 2023. pp 73-95.
11. Chaabane S, Doraiswamy S, Chaabna K, Mamtani R, Cheema S. The Impact of COVID-19 School Closure on Child and Adolescent Health: A Rapid Systematic Review. Children (Basel). 2021; 8 (5): 415. doi: 10.3390/children8050415.
12. Colao A, Piscitelli P, Pulimeno M, Colazzo S, Miani A, Giannini S. Rethinking the role of the school after COVID-19. Lancet Public Health. 2020; 5 (7): e370. doi: 10.1016/S2468-2667(20)30124-9.
13. Sari T, Nayır F. Challenges in distance education during the COVID-19 pandemic period. Qual Res Educ. 2020; 9 (3): 328-60. doi: 10.17583/qre.2020.5872.
14. Atiqul Haq SM, Ahmed MN, Lalin SA, Arno AT, Ahmed KJ. Early marriage of girls in the context of the COVID-19 pandemic: a literature review. Humanit Soc Sci Commun. 2024; 11 (1): 1.
15. Nhampoca JM, Maritz JE. Early marriage, education and mental health: experiences of adolescent girls in Mozambique. Front Glob Womens Health. 2024; 5: 1278934. doi: 10.3389/fgwh.2024.1278934.
16. Cachón-Zagalaz J, Sánchez-Zafra M, Sanabrias-Moreno D, González-Valero G, Lara-Sánchez AJ, Zagalaz-Sánchez ML. Systematic Review of the Literature About the Effects of the COVID-19 Pandemic on the Lives of School Children. Front Psychol. 2020; 11: 569348. doi: 10.3389/fpsyg.2020.569348.
17. Fantini MP, Reno C, Biserni GB, Savoia E, Lanari M. COVID-19 and the re-opening of schools: a policy maker's dilemma. Ital J Pediatr. 2020; 46 (1): 79. doi: 10.1186/s13052-020-00844-1.
18. Moscoviz L, Evans DK. Learning loss and student dropouts during the covid-19 pandemic: A review of the evidence two years after schools shut down. Available at: https://www.cgdev.org/publication/learning-loss-and-student-dropouts-during-covid-19-pandemic-review-evidence-two-years [Accessed on November 12, 2022].
19. Tsolou O, Babalis T, Tsoli K. The impact of the COVID-19 pandemic on education: social exclusion and dropping out of school. Creat Educ. 2021; 12 (3): 529-44. doi: 10.4236/ce.2021.123036.
20. Imran N, Zeshan M, Pervaiz Z. Mental health considerations for children & adolescents in COVID-19 Pandemic. Pak J Med Sci. 2020; 36 (COVID19-S4): S67-S72. doi: 10.12669/pjms.36.COVID19-S4.2759.

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