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Prevalence of Behavioral and Emotional Disorders Among Rural and Urban School Going Children and Adolescents

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Abstract

Background: The mental health of children and adolescents is a critical concern, with significant implications for long-term outcomes. This study aims to assess the prevalence of behavioral and emotional disorders among school-going children and adolescents in rural and urban areas of Meherpur District, Bangladesh, and to explore the socio-economic factors contributing to these disparities. **Material & Methods:** This cross-sectional, descriptive, and analytical study was conducted among 435 school-going children and adolescents in rural and urban areas of Meherpur District, using purposive sampling. Data were collected through questionnaires and the Development and Well-being Assessment (DAWBA), with diagnoses generated according to ICD-10 criteria. **Results:** The study found that the prevalence of psychiatric disorders was slightly higher in rural participants (15.89%) compared to urban participants (14.03%), though the difference was not statistically significant. Major depressive disorder was the most common emotional disorder, affecting 3.74% of rural participants and 2.26% of urban participants. Hyperkinetic disorder was more prevalent in urban participants (2.71%) compared to rural participants (1.87%). Parental education, particularly maternal education, and occupational status were significantly associated with the prevalence of psychiatric disorders, with rural areas showing higher rates of illiteracy and agricultural occupation among parents. **Conclusions:** The findings suggest that while there are slight differences in the prevalence of psychiatric disorders between rural and urban populations, the socio-economic disparities, particularly in parental education and occupation, play a critical role in influencing these outcomes. Targeted interventions addressing these factors are essential for improving the mental health of children and adolescents in both rural and urban settings.

Keywords:- Behavioral disorders, Emotional disorders, Rural vs. urban, Child and adolescent mental health, Bangladesh.

INTRODUCTION

The mental health of children and adolescents is a critical aspect of overall well-being, with long-term implications for educational attainment, employment, and social relationships. Globally, behavioral and emotional disorders such as

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anxiety, depression, and attention-deficit/hyperactivity disorder (ADHD) are prevalent among school-going children and adolescents, with significant consequences for their academic performance and social interactions. Recent meta-analyses estimate that anxiety affects approximately 6.5% of children and adolescents worldwide, while depression impacts about 2.6%, and ADHD is present in roughly 3.4% of this population. These disorders, if left unaddressed, can severely disrupt the developmental trajectory, leading to poor academic outcomes, social isolation, and an increased risk of chronic mental health conditions in adulthood.[1,2] The significance of addressing mental health issues during childhood and adolescence cannot be overstated. Mental health problems that emerge during these formative years are often precursors to more severe mental health issues in adulthood. Early identification and intervention are critical in preventing the progression of these disorders and mitigating their long-term impact. Studies have shown that untreated adolescent depression, for example, is a powerful predictor of chronic mental health problems in later life, including persistent depressive disorders, anxiety disorders, and even suicidality.[3] Furthermore, health conditions in early adolescence have been linked to poor educational and employment outcomes, with mental health issues significantly mediating these relationships through factors such as social exclusion and truancy.[4] The importance of early mental health interventions is further underscored by evidence suggesting that targeted interventions during adolescence can substantially improve long-term outcomes, including reducing the risk of substance abuse, improving occupational functioning, and enhancing general health.[5,6] Rural and urban disparities in mental health outcomes further complicate the landscape of adolescent mental health. Research consistently shows that rural populations face significant health disparities compared to their urban counterparts, driven by factors such as lower socio-economic status, limited access to healthcare, and higher exposure to environmental stressors. For instance, rural areas are often characterized by higher rates of preventable conditions, including mental health disorders, which are exacerbated by risky health behaviors such as smoking and physical inactivity.[7,8] Moreover, rural residents often have less access to mental health services, which contributes to the persistence of these disparities. Even when healthcare is accessible, the quality and comprehensiveness of care in rural areas often lag behind urban centers, leading to worse mental health outcomes.[9,10] Interestingly, some studies have suggested that despite these challenges, rural residents with access to care may report better mental health outcomes than their urban counterparts, possibly due to stronger community ties and social support systems in rural areas.[11]

The rural-urban divide is also evident in the differences in health-related quality of life among populations with psychiatric disorders. For example, research has shown that rural veterans with mental health disorders experience a greater burden of disease and poorer quality of life than urban veterans, despite lower reported prevalence rates of certain mental health conditions in rural areas.[12] This paradox highlights the complex interplay of factors that influence mental health outcomes in rural settings, including socio-

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economic disadvantages, cultural attitudes toward mental health, and structural barriers to care. In Bangladesh, the context of this study, these disparities are likely to be even more pronounced due to the country's socio-economic challenges and the uneven distribution of healthcare resources. The mental health of children and adolescents in rural Bangladesh is likely to be significantly affected by factors such as poverty, lack of access to quality education, and limited healthcare infrastructure. These factors contribute to a higher prevalence of mental health issues in rural areas, which are often exacerbated by the stigma associated with mental illness and the lack of specialized mental health services. In contrast, urban areas, while better resourced, are not immune to mental health challenges. Urban adolescents face their own set of stressors, including academic pressure, social isolation, and exposure to environmental pollutants, which can negatively impact their mental health.[13] This study aims to explore the prevalence of behavioral and emotional disorders among school-going children and adolescents in both rural and urban areas of Bangladesh. By examining the differences in mental health outcomes between these two settings, this research seeks to identify the key factors contributing to these disparities and to inform the development of targeted interventions that can address the unique needs of rural and urban populations. The findings of this study will have important implications for public health policy in Bangladesh, particularly in terms of improving access to mental health services and promoting early intervention strategies in schools.

MATERIAL AND METHODS

This study was a cross-sectional, descriptive, and analytical investigation conducted to assess the prevalence of behavioral and emotional disorders among school-going children and adolescents in the Meherpur District of Bangladesh. Meherpur, located in the south-west region of Bangladesh within the Khulna division, was selected as the study site due to its diverse rural and urban settings. The district, situated 150 kilometers from Khulna, comprises three Upazillas: Meherpur Sadar, Mujib Nagar, and Gangni. The study focused on school-going children and adolescents from two purposively selected sites within Meherpur District, representing both rural and urban populations. For the rural sample, two schools from Gangni Upazilla, specifically Jorepukuria government primary school and Jorepukuria high school, were selected. These schools are located in the village of Jorepukuria, approximately 20 kilometers from Meherpur proper, and are characterized by clear administrative boundaries and relative isolation. The rural schools serve a total of approximately 650 students across grades one through ten. For the urban sample, the study was conducted in the Meherpur municipal area, specifically within the SM government primary school and Mullickpara Kabi Nazrul High School. These urban schools were selected based on their location within the municipal boundaries and their co-educational structure, similar to the rural schools. The urban schools serve a total of approximately 841 students, also across grades one through ten. The study was conducted over a three-year period from January 2007 to December 2009. The study population included school-going children and adolescents aged 5 to

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18 years, with a total sample size of 435 participants. The sampling technique employed was purposive sampling, targeting both rural and urban school populations to ensure representation across the district. In the rural setting, a total of 225 students were selected using a combination of cluster and simple random sampling techniques. Students were first clustered according to their class level, and proportionate sampling was then conducted to ensure that both sexes were adequately represented. Simple random sampling, specifically the lottery method, was applied to select participants from the class registers. Similarly, in the urban setting, 225 students were selected using the same sampling approach. Students were clustered by class level, and proportional representation was ensured before applying simple random sampling to select participants. Inclusion criteria for the study were school-going children and adolescents within the selected district, aged 5 to 18 years, and of both sexes. Exclusion criteria included children and adolescents with severe physical illnesses or severe cognitive impairments that would interfere with their ability to participate in the study. The research instruments utilized included a questionnaire designed to assess socio-demographic variables and relevant information related to emotional and behavioral disorders. The Development and Well-being Assessment (DAWBA), an internationally recognized tool developed by Meltzer et al. (2000) and validated in Bangla by Mullick (2005), was employed to generate ICD-10 and DSM-IV psychiatric diagnoses. The DAWBA consists of structured and open-ended questionnaires administered to parents, teachers, and adolescents (aged 11-18 years), with the interview data subsequently reviewed by experienced clinicians to assign diagnoses based on ICD-10 criteria. Finally, the ICD-10 Diagnostic Criteria for Research (DCR) was used to generate Axis-I diagnoses from the DAWBA results, focusing on the most common emotional, behavioral, and hyperactivity disorders. The ICD-10, as revised by the World Health Organization (WHO) in 1993, provided the specific criteria for the diagnosis of mental and behavioral disorders considered in this study.

RESULTS

The gender distribution showed that a higher percentage of male participants were from rural areas (64.02%) compared to urban areas (55.66%), although this difference was not statistically significant (p=0.075). Conversely, a higher proportion of female participants were from urban areas (44.34%) compared to rural areas (35.98%). Age distribution across the two settings revealed that the 5-10 age group constituted 33.18% of rural participants and 43.89% of urban participants, with no significant difference between the groups (p=0.072). The 11-15 age group was slightly more represented in the rural sample (36.92%) compared to the urban sample (31.22%). Similarly, the 16-18 age group had a higher proportion in rural areas (29.91%) than in urban areas (24.89%). Regarding educational status, a significantly higher proportion of rural participants were in secondary education (65.89%) compared to urban participants (56.11%), while a larger percentage of urban participants were in primary education (43.89%) compared to their rural counterparts (34.11%), with this difference being statistically significant (p=0.037).

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Regarding fathers' education, a significantly higher proportion of fathers in rural areas were illiterate (37.85%) compared to urban areas (22.17%) (p=0.001). Conversely, urban fathers were more likely to have higher secondary (18.55%) and graduate or postgraduate education (11.31%) compared to their rural counterparts, where these education levels were notably lower (7.47%). Mothers' education followed a similar pattern, with a significantly higher proportion of illiterate mothers in rural areas (61.21%) compared to urban areas (33.03%) (p=0.001). Urban mothers were more likely to have completed primary (34.39%) and secondary (17.65%) education compared to rural mothers, where these levels of education were significantly less common. In terms of occupational status, a substantial difference was noted in fathers' occupations between rural and urban areas. In rural areas, the majority of fathers were farmers (53.27%), whereas in urban areas, the dominant occupations were labor (38.46%) and rikshawpulling (23.98%) (p=0.001). Similarly, mothers in rural areas were predominantly housewives (96.73%), whereas in urban areas, a higher percentage of mothers were employed as service holders (10.86%) or laborers (8.14%) (p=0.001). The monthly family income also differed significantly between the two groups. A significantly higher proportion of rural families had a monthly income of less than 10,000 Tk (94.86%) compared to urban families (78.73%) (p=0.001). Urban families were more likely to have higher incomes, with 21.26% earning between 10,000 and 20,000 Tk or more than 20,000 Tk, compared to only 5.14% of rural families.

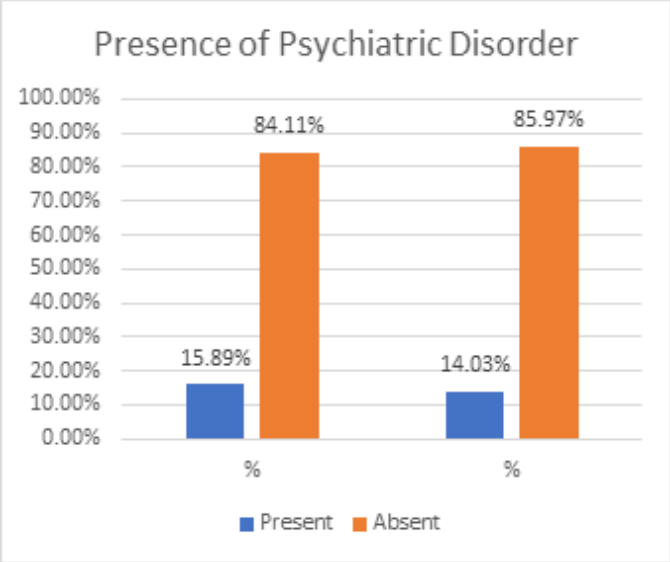

Figure 1: Distribution of participants by presence of any kind of psychiatric disorder (N=435)

The data reveals that 15.89% of the participants from rural areas were identified with a psychiatric disorder, compared to 14.03% of those from urban areas. Despite the slightly higher prevalence in rural participants, the difference between rural and urban groups was not statistically significant (p=0.586). The majority of participants in both settings were free from psychiatric disorders, with 84.11% of rural participants and 85.97% of urban participants not exhibiting any psychiatric conditions.

The most commonly reported emotional disorder among participants was major depressive disorder, with a slightly higher prevalence in rural areas (3.74%) compared to urban areas (2.26%), though this difference was not statistically significant (p=0.834). Other emotional disorders, including generalized anxiety disorder, obsessive-compulsive disorder, and separation anxiety disorder, were

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reported at low rates in both settings, with no significant differences between rural and urban participants. Specifically, generalized anxiety disorder was present in 1.87% of rural participants and 1.36% of urban participants. Obsessive-compulsive disorder affected 1.40% of rural participants and 0.90% of urban participants. Separation anxiety disorder was slightly more common in urban participants (1.36%) compared to rural participants (0.93%). Other emotional disorders such as specific phobia, social phobia, post-traumatic stress disorder (PTSD), panic disorder without agoraphobia, and agoraphobia were reported in very low numbers, with prevalence rates below 1% in both rural and urban settings. Notably, social phobia, PTSD, and agoraphobia were only reported among rural participants, while panic disorder without agoraphobia was reported only among urban participants. The majority of participants in both rural (89.25%) and urban (91.86%) settings did not have any emotional disorder.

The most common behavioral disorder observed among the participants was hyperkinetic disorder, with a slightly higher prevalence in urban areas (2.71%) compared to rural areas (1.87%). Conduct disorder was relatively uncommon, affecting 1.36% of urban participants and 0.47% of rural participants. Conversely, oppositional defiant disorder was slightly more prevalent in rural areas (1.40%) than in urban areas (0.45%). The category of "Other behavioral disorders" was reported equally among rural and urban participants, with a prevalence of 1.40% in rural areas and 1.36% in urban areas. Overall, the vast majority of participants did not have any behavioral disorder, with 94.86% of rural participants and 94.12% of urban participants falling into this category. However, this difference was not statistically significant (p=0.522).

Table 1: Distribution of baseline characteristics among the participants (N=435)

Variable	Rural (n=214)		Urban (n=221)		p-value
	n	%	n	%	
Gender					
Male	137	64.02%	123	55.66%	0.075
Female	77	35.98%	98	44.34%	
Age					
5-10	71	33.18%	97	43.89%	0.072
11-15	79	36.92%	69	31.22%	
16-18	64	29.91%	55	24.89%	
Educational Status					
Primary	73	34.11%	97	43.89%	0.037
Secondary	141	65.89%	124	56.11%	

Table 2: Distribution of family related characteristics among the participants (N=435)

Family Characteristics	Rural (n=214)		Urban (n=221)		p-value
	n	%	n	%	
Fathers Education					

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Page no- 81-91 | Section- Research Article (Psychiatry)

Illiterate	81	37.85%	49	22.17%	0.001
Primary	84	39.25%	55	24.89%	
Secondary	30	14.02%	51	23.08%	
Higher Secondary	13	6.07%	41	18.55%	
Graduate	3	1.40%	18	8.14%	
Postgraduate	3	1.40%	7	3.17%	
Mothers Education					
Illiterate	131	61.21%	73	33.03%	0.001
Primary	48	22.43%	76	34.39%	
Secondary	20	9.35%	39	17.65%	
Higher Secondary	9	4.21%	17	7.69%	
Graduate	5	2.34%	11	4.98%	
Postgraduate	1	0.47%	5	2.26%	
Fathers Occupational Status					
Farmer	114	53.27%	20	9.05%	0.001
Labor	61	28.50%	85	38.46%	
Service holder	12	5.61%	37	16.74%	
Rikshawpuller	13	6.07%	53	23.98%	
Driver	5	2.34%	9	4.07%	
Business	9	4.21%	17	7.69%	
Mother's Occupational Status					
House wife	207	96.73%	179	81.00%	0.001
Labor	3	1.40%	18	8.14%	
Service holder	4	1.87%	24	10.86%	
Monthly Family Income					
<10000 Tk	203	94.86%	174	78.73%	0.001
10000-20000 Tk.	9	4.21%	26	11.76%	
>20000 Tk.	2	0.93%	21	9.50%	

Table 3: Distribution of participants by types of emotional disorder (N=435)

Emotional Disorder	**Rural (n=214)**		**Urban (n=221)**		**p-value**
	n	**%**	**n**	**%**	
Major depressive disorder	8	3.74%	5	2.26%	0.834
Generalized anxiety disorder	4	1.87%	3	1.36%	
Obsessive compulsive disorder	3	1.40%	2	0.90%	
Separation anxiety disorder	2	0.93%	3	1.36%	
Specific phobia	2	0.93%	2	0.90%	
Social phobia	1	0.47%	0	0.00%	
Post traumatic stress disorder	1	0.47%	0	0.00%	
Panic disorder without agoraphobia	0	0.00%	1	0.45%	
Agoraphobia	1	0.47%	0	0.00%	

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Page no- 81-91 | Section- Research Article (Psychiatry)

Other anxiety disorder	1	0.47%	2	0.90%	
No emotional disorder	191	89.25%	203	91.86%	

Table 4: Distribution of participants by types of behavioral disorder (N=435)

Behavioral Disorder	**Rural (n=214)**		**Urban (n=221)**		**p-value**
	n	**%**	**n**	**%**	
Hyperkinetic disorder	4	1.87%	6	2.71%	0.522
Conduct disorder	1	0.47%	3	1.36%	
Oppositional defiant disorder	3	1.40%	1	0.45%	
Other behavioral disorder	3	1.40%	3	1.36%	
No Behavioral Disorder	203	94.86%	208	94.12%	

DISCUSSION

The current study provides valuable insights into the prevalence of behavioral and emotional disorders among school-going children and adolescents in rural and urban areas of Meherpur District, Bangladesh. The findings highlight several important trends in mental health that reflect broader patterns observed in other regions and contexts, as evidenced by the reviewed literature. Our study found that 15.89% of rural participants and 14.03% of urban participants were identified with psychiatric disorders, with no statistically significant difference between the two groups. This aligns with the findings of Breslau et al., who observed similar patterns in the United States, where the prevalence of mental disorders, including depression and hyperkinetic disorders, did not significantly differ between large metropolitan and rural areas (14). However, it contrasts with the work of Peen et al., who reported a higher prevalence of psychiatric disorders in more urbanized areas in the Netherlands, suggesting that the urban environment may contribute to the complexity and prevalence of these disorders.[15] The prevalence of emotional disorders in our study was low, with major depressive disorder being the most common, affecting 3.74% of rural participants and 2.26% of urban participants. These findings are consistent with those from a study in Bangalore, India, which reported no significant differences in the prevalence of emotional disorders between urban and rural areas.[16] The slightly higher prevalence of depressive disorders in rural areas observed in our study is also reflected in research from Norway, which found that rural regions exhibited lower rates of depressive disorders compared to urban areas, though with similar patterns of alcohol abuse and major depression.[17] The study by Lehtinen et al. also reported significant urban-rural differences in the prevalence of depressive disorders among women in Europe, further illustrating the complexity of these patterns across different contexts.[18] In terms of behavioral disorders, our findings indicate that hyperkinetic disorder was slightly more prevalent in urban participants (2.71%) compared to rural participants (1.87%). This observation is supported by the study conducted by Robinson et al., which found that behavioral disorders, including hyperkinetic disorder, were slightly more common in rural areas, though urban areas also exhibited

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Page no- 81-91 | Section- Research Article (Psychiatry)

significant prevalence rates.[19] Similarly, Pahwa et al. reported that hyperkinetic and other behavioral disorders were more prevalent among urban adolescents in Punjab, India, suggesting that urban environments might present unique stressors contributing to these disorders.[20] The educational status of parents, particularly mothers, was found to be significantly associated with the prevalence of psychiatric disorders in our study. Rural mothers were more likely to be illiterate (61.21%) compared to urban mothers (33.03%), and this disparity in education could contribute to the higher burden of psychiatric disorders in rural areas. This finding is consistent with research from various settings, including the study by Zanvar & Devi, which highlighted the profound impact of maternal education on children's health outcomes, particularly in rural areas where educational attainment is lower.[21] Additionally, the study by Ayen et al. emphasizes the crucial role of maternal education and socio-economic status in determining health outcomes, with significant differences observed between rural and urban settings.[22] Occupational status also played a critical role in our findings. A higher proportion of rural fathers were farmers (53.27%), while urban fathers were more likely to be laborers or rikshawpullers. This occupational divide aligns with the findings of Bliznashka et al., who reported that agricultural employment, common in rural areas, is associated with poorer child development outcomes and lower women's empowerment, compared to non-agricultural employment prevalent in urban settings.[23] The study by Wang further underscores how parental occupation, particularly that of fathers, can influence health disparities among children, with those in rural areas being at a disadvantage.[24] Family income was another significant factor in our study, with a higher proportion of rural families earning less than 10,000 Tk per month compared to urban families. This income disparity is a critical factor that could exacerbate mental health issues in rural areas, as evidenced by the study conducted by Emran et al., which found that lower income levels in rural areas contribute to greater gender disparities and poorer educational outcomes for children.[25] In conclusion, the findings of our study reflect the complex interplay of socio-economic, educational, and environmental factors that influence the prevalence of behavioral and emotional disorders among children and adolescents in rural and urban areas. These findings are consistent with broader patterns observed in other regions, as evidenced by the reviewed literature. The disparities in parental education, occupational status, and income between rural and urban areas underscore the need for targeted interventions that address these underlying factors to improve mental health outcomes for children and adolescents. Future research should continue to explore these dynamics in different contexts to inform more effective public health strategies.

Limitations of The Study: The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSIONS

The current study highlights the significant disparities in behavioral and emotional disorders among school-going children and adolescents in rural and urban areas of Meherpur District, Bangladesh. Despite the

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Page no- 81-91 | Section- Research Article (Psychiatry)

slightly higher prevalence of psychiatric disorders in rural areas, the overall differences between rural and urban populations were not statistically significant. However, the findings underscore the influence of socio-economic factors, parental education, and occupational status on the mental health of children and adolescents. The data suggest that targeted interventions addressing these underlying determinants, particularly in rural areas, are crucial for improving mental health outcomes. Future research should continue to explore these dynamics in different contexts, with a focus on developing effective public health strategies that cater to the specific needs of both rural and urban populations.

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Page no- 81-91 | Section- Research Article (Psychiatry)

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