

Barriers to access in maternity healthcare services during the postpartum period: a study in Khulna City, Bangladesh

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ABSTRACT

Aims: The main objectives of this study were to identify barriers to accessing maternity healthcare services during the postpartum period.

Methods: This study was conducted by following a quantitative research design, and a survey method was employed. Data were collected from 232 respondents by using multistage stratified random sampling. The respondents were women who gave birth to at least one child during the last year. Data were analyzed by using IBM SPSS Statistics v25.0.

Results: The findings of this study reveal that the majority of the respondents were deprived of basic maternity care. They faced different sorts of barriers, such as individual barriers (lack of education and awareness, occupation); interpersonal barriers (lack of social and economic support from the family); community level barriers (impact of religious beliefs/decision making capacity on postpartum maternity care); institution-level barriers (lack of sufficient infrastructure and service delivery of the healthcare centre); policy level barriers (lack of the implementation of proper policy). Tukey HSD post hoc analysis indicated a significant difference only between households with heads having 1-5 years and 6-12 years of education (mean difference=-0.304, $p=.006$). There were no significant differences across the other education groups (all $p>.05$).

Conclusion: The government should focus on strengthening the maternity health care system and raising awareness among women and the household head in slum areas. Additionally, interventions, instead of broad education-based policies, should be targeted at the lower educated households.

Keywords: Barriers, women, healthcare, coping strategies, postpartum

INTRODUCTION

Postpartum care is essential for both the mother and the newborn baby to ensure their health and well-being. Nevertheless, in many parts of the world, postpartum care is either inadequate or absent. Lack of proper postpartum care can be the cause of very serious complications, which can be life-threatening, including maternal mortality, infant mortality, mental health challenges, physical health issues, and long-term effects on physical and mental health. Here, maternal mortality is one of the most severe outcomes of inadequate postpartum care. According to the World Health Organization, most maternal deaths occur within the first six weeks after childbirth.¹ Generally, the postpartum period lasts about 6 weeks (42 days) after childbirth.² The reproductive age range of Bangladeshi women is generally considered between 15 and 49 years. This period represents the age range when Bangladeshi women are biologically capable of bearing children.³⁻⁵ In addition, women who have recently given birth to a child have experienced current maternity healthcare access and barriers, and they can capture experiences with healthcare systems, policies, and societal changes that are still

in place, which helped the researcher identify contemporary issues rather than outdated ones. Mothers are at risk during this period of developing infections, postpartum hemorrhage, and other life-threatening conditions. Among them, postpartum hemorrhage remains a notable cause of maternal mortality worldwide.⁶ Poor women with limited access to maternity healthcare services face tremendous barriers in Bangladesh.⁷

Postpartum checkups are essential for monitoring signs of infection and providing early treatment.⁸ They may also sometimes experience chronic health problems.⁹ Mental health is one of them. It is also a crucial issue during the postpartum period. Lack of adequate care during this period can exacerbate some serious mental health issues, leading to conditions such as anxiety, sadness, fatigue, postpartum depression, and, in some severe cases, postpartum psychosis.¹⁰ The absence of adequate care during the postpartum period also has significant complications for the newborn child. Inadequate care during this critical period can lead to a



higher risk of infant mortality as well as malnutrition and developmental delays in newborns. The neonatal period is the most vulnerable period for newborns, and the lack of postpartum care leads to excessive infant mortality.¹¹ Mothers who do not receive proper postpartum care may experience struggles with the transition to parenthood. This can have long-term effects on family cohesion and child-rearing practices.¹²

Since Sustainable Development Goal (SDG) 3 aims to ensure good health and well-being at all ages, which includes two of the most important targets: reducing maternal mortality and ensuring universal access to reproductive healthcare and family planning, among the 21 targets of the SDGs.¹³ People who live in slum areas frequently experience inadequate access to postpartum care, such as women who visit a minimum of four times for antenatal care in a hospital but have a minor visit to take postnatal care after childbirth.¹⁴ Therefore, the objectives of this study were to identify barriers to access to maternity healthcare services during the postpartum period.

This study can make several noteworthy contributions. First, this study will assist in formulating national policies to address the barriers to access to maternal health care services during the postpartum period. Second, it creates opportunities for further research by deepening the understanding of these barriers. Third, as certain strategies have been identified to mitigate these barriers, the study can inform the development of interventions. After the intervention's development and implementation, the slum dwellers' mothers will benefit locally by gaining access to maternal health care. Finally, this study may inform policies toward SDG 3.

Theoretical Framework

This study adopts the Socio-ecological Model (SEM) to identify the barriers slum-dwelling mothers face in accessing maternity healthcare services during the postpartum period. Bronfenbrenner introduced the socio-ecological model in 1970.¹⁵ However, it was later developed to promote health-related behavioral changes.¹⁶

The SEM model shows how multi-level barriers affect access to postpartum healthcare services. Based on this model, at the individual level, factors such as education and occupation shape healthcare utilization. At the interpersonal level, a lack of family support and financial constraints of the family significantly impact women's access to postpartum healthcare. At the community level, reliance on traditional healing practices and religious practices is identified as an obstacle. At the institutional level, inadequate healthcare facilities, a shortage of skilled providers, and a lack of essential medical equipment are notable barriers. At the policy level, weak policy implementation is a significant barrier.

METHODS

Ethics

This study was conducted with the approval of the Ethics Committee of the Researches and Innovation Center at Khulna University (Date: 12.03.2025, Decision No: KUECC-2025-03-24). All procedures were carried out in accordance with the ethical rules and the principles of the

Declaration of Helsinki. Written informed consent was obtained from all individual participants prior to their inclusion in the study.

Research Design

This study employed a quantitative research design. Because a quantitative approach enables systematic measurement of variables and facilitates statistical analysis to determine their relative significance, it also provides empirical evidence that enhances the validity of the findings.¹⁷ The nature of this study was explanatory. Explanatory research primarily focuses on understanding the underlying causes and relationships among variables. It aims to provide deeper insights into how or why certain phenomena occur.¹⁸ This study was conducted using the survey method because it is the most common quantitative research method. It involves structured questions presented to respondents in various formats, such as questionnaires and interviews, depending on research goals and available resources.¹⁹

Study Settings

The study has been conducted in four slum areas under the Khulna City Corporation. Reasons include that slum populations often experience higher rates of maternal and infant mortality compared to other urban and rural areas. Poor access to antenatal care, inadequate healthcare infrastructure, and insufficient skilled birth attendance contribute to these outcomes. Slum areas often lack access to sufficient healthcare facilities, which makes it difficult for women to receive maternal care.²⁰ Therefore, the research has been conducted in four informal settlements (Bastuhara Colony Slum, Hafiz Nagar Slum, Rupsha Slum, Railway Slum) to fulfill the research aim and objectives. The details of the study settings are given in **Table 1**.

Table 1. Study settings

SI no	Name of slums	Locations
1	Bastuhara colony slum	Ward No. 09, Khulna City Corporation
2	Rail-crossing slum	Ward No. 10, Khulna City Corporation
3	Railway Slum	Ward No. 21, Khulna City Corporation
4	Rupsha Slum	Ward No. 22, Khulna City Corporation
SI no: Serial number		

Participants of the Study

The primary entity being studied or analyzed in research is known as the unit of analysis. The choice of unit of analysis determines the level of retraction of the research and influences the kind of data collected and the conclusions drawn.²¹ The primary unit of analysis in this study is as follows, based on some inclusion and exclusion criteria. Women who gave birth to at least one baby during the last year, who are 15 to 49 years old, and who live in four selected slum areas were the participants of the study. The women who do not belong to the above characteristics were excluded from this study.

Sampling Procedure

A multistage stratified random sampling procedure has been used to achieve a representative sample. The sampling procedure initially included Khulna district from the 64 districts of Bangladesh. Then, four slum areas were selected

from Khulna city. Based on the household census, the population size was 582. From these, 232 individuals were selected using a statistically appropriate sample size. The sample was distributed proportionally among the wards based on population size to ensure fair representation and reduce sampling bias.

Sample Size Determination

To determine the actual sample size, the following formula by Cochran was used.

$$SS = \frac{Z^2 \times P(1-p)}{C^2}$$

Calculation for the finite sample size in this study

$$\begin{aligned} SS_1 &= \frac{SS}{1 + \frac{SS-1}{P}} \\ &= \frac{384.16}{1 + \frac{384.16-1}{582}} \\ &= \frac{384.16}{1 + 0.658} \\ &= \frac{384.16}{1.658} \\ &= 231.70 \\ &= 232 \end{aligned}$$

Probability calculation for each ward, formula (Table 2)

$$\frac{\text{Total population of the ward}}{\text{Total population of the study}} \times \text{sample size}$$

Table 2. Calculated sample size

Sl no	Location	Number of people in stratum	Sample size
1	Ward no 9	n=88	n=35
2	Ward no 10	n=130	n=52
3	Ward no 21	n=188	n=75
4	Ward no 22	n=176	n=70
Total population=582			Total sample=232

Source: Household census, 2025. Sl no:Serial number

Data Collection

Data have been collected according to precise instructions. The fieldwork was conducted from 5 to 14 April 2025. In this study, despite using the survey method, a semi-structured

interview schedule with both open-ended and closed-ended questions was used instead of a questionnaire because the study involved lower-educated mothers living in slum areas. If the researchers had not conducted face-to-face interviews, the participants would not have been able to answer the questionnaire properly. That is why the researchers chose an interview schedule instead of a questionnaire. The interview schedule was developed based on the study objectives and consisted of three modules. The first module covered socio-demographic information of the respondents; the second addressed barriers to accessing maternal health care during the postpartum period; and the third focused on their adaptive strategies. Data were measured by using nominal and interval scales. The informants were assured the highest confidentiality of the information they provided. Anonymity was maintained to avoid disclosing informants' identities. During data collection, the informants were not forced to participate in the study, and the researcher sought to build rapport with them.

Explanatory Variable

Based on Bronfenbrenner's Socio-ecological Model, the explanatory variables were categorized into five categories. Individual factors such as education (illiterate/primary/secondary/tertiary), occupation (housewife/maid/day laborer/fish cutter/tailor). Interpersonal factors, including status of receiving social support (yes/no), from whom receiving the social support (family/neighbor/husband), the effectiveness of support (excellent/good/neutral/poor/very poor), and status of facing economic hardship from family (yes/no). Community level barriers, such as the impact of religious beliefs/decision-making capacity on postpartum maternity care (yes/no), taking a strategy as an alternative (cope with the situation/take permission from the household head/go outside to maintain purdah). Institution-level barriers regarding sufficiency of infrastructure and service delivery of the healthcare center (strongly disagree/disagree/neutral/agree/strongly agree).

Statistical Analysis

The collected data have been analyzed using IBM SPSS Statistics v25.0. Data were measured by using nominal and interval scales. Mainly, two sections were followed in variable measurement. Firstly, univariate (mean, median, frequency, percentage). In the second section, we used bivariate analysis (Chi-square test).

RESULTS

Table 3 displays the socio-demographic data of the study participants. A majority of the participants were between 25 and 31 years old. In the study group, 21.1% were illiterate, 37.5% had completed primary education, and 41.4% had secondary education. None of the respondents was tertiary educated. Additionally, most respondents (59.9%) were housewives. Regarding the number of children, 42.2% had one child. Concerning childbirth methods, a significant 61.6% of women had cesarean deliveries, while 38.4% experienced vaginal deliveries. Most of the respondents' monthly family income was within 21,500 BDT.

The Table 4 shows that, in terms of social support during the postpartum period, 55.2% of women got social support, while 44.8% of women did not get social support. Approximately

Table 3. Socio-demographic information of the participants and individual barriers regarding health care access

Name of the variables		Characteristics		Frequency (n)	Percent (%)
Age	Categories	Adolescence	<18	17	7.3
		Young adulthood	18-24	81	34.9
		Mature adulthood	25-31	92	39.7
		Mature adulthood	>31	42	18.1
Religion		Islam		190	81.9
		Sanatan		42	18.1
Marital status		Married		231	99.6
		Divorced		1	0.4
Educational qualification	Categories	Illiterate	0	49	21.1
		Primary	1-5	87	37.5
		Secondary	6-12	96	41.4
		Tertiary	Bachelor's	0	0
Occupation		Housewife		139	59.9
		Maid		28	12.1
		Day labor		22	9.5
		Fish cutter		21	9.1
		Tailor		22	9.5
Number of children	Categories	Only one child		98	42.2
		Two children		71	30.6
		More than two children		63	27.2
Type of delivery		Normal		89	38.4
		Caesarian		143	61.6
Total monthly income of the family	Range	Lower	1-12500	82	35.3
		Lower middle	12501-21500	128	55.2
		Lower middle	>21501	22	9.5

14% received social support from their family, 10% from husband, and 21.5% from the neighbor. In addition, in terms of the effectiveness of this support, 9.9% rated their spousal support as excellent, 33.2% rated it as good in nature, and 33.2% remained neutral. However, about 17 percent rated their husband's support as poor in nature, while (n=17) 7.3% rated it as very poor in nature or absent of support. This table also reported that most of the respondents faced economic hardship from family which negatively affected their healthcare access.

Table 4. Interpersonal barriers regarding social and economic support from family during postpartum period

Name of variables	Categories	Frequency (n)	Percent (%)
Status of receiving social support during postpartum period	Yes	128	55.2
	No	104	44.8
Sources of receiving social support	From family	41	13.2
	From neighbor	34	10.1
	From husband	53	21.5
Status of receiving social support from husband	Yes	147	63.4
	No	85	36.6
Effectiveness of this support	Excellent	23	9.9
	Good	77	33.2
	Neutral	77	33.2
	Poor	38	16.4
	Very poor	17	7.3
Status of facing economic hardship from family	Yes	133	57.3
	No	99	42.7

Table 5 explores the impact of religious beliefs on assessing postpartum maternity care. In this outlook, 24.1% acknowledged that their religious convictions impacted their ability in healthcare utilization. As alternative strategies to manage the situation, (3.9%) women argued that they did not take any alternative without a self-endurance strategy. Where (11.2%) women sought permission from their household head to go outside, and (9.5%) women strictly adhered to their purdah to go outside, aligning a system of coping mechanisms. A majority (54.3%) of the respondents disclosed that decision-making capacity create impact on taking postpartum maternity care. As the alternative strategies to manage these difficulties, a majority of the respondents sought permission from their spouse, and the rest of the respondents either took permission from the household head or convinced them. In most of the cases, the decision-making regarding maternal health care was taken by their husband.

Table 6 shows that, in terms of the availability of healthcare professionals at the nearest healthcare center, only 27.6% of women agreed, but none strongly agreed. Additionally, only 18.1% and 12.5% of mothers agreed and strongly agreed, respectively, regarding the support and understanding capacity of healthcare providers. On the other hand, the majority strongly disagreed about the healthcare providers' ability to identify immediate problems. Concerning their behavior, 28.4% disagreed, while 30.6% of women were neutral. Only 16.4% agreed and 12.1% strongly agreed. Regarding the sufficiency of healthcare providers, 18.5% disagreed, 29.3% were neutral, only 36.2% agreed, and 15.9% strongly agreed. Regarding the sufficiency of necessary

Table 5. Community-level barriers and adaptive resilience of postpartum women in healthcare utilization

Name of the variables	Categories	Frequency (n)	Percent (%)
Impact of religious beliefs on postpartum maternity care	Yes	56	24.1
	No	176	75.9
Taking a strategy as an alternative	Cope with the situation	9	3.9
	Taking permission from household head	26	11.2
	Go outside with maintaining purdah	22	9.5
Impact of decision-making capacity to take postpartum maternity care	Yes	126	54.3
	No	106	45.7
Taking strategy as alternative	Cope up with the situation	36	14.9
	Taking permission from household head	51	22.0
	Try to convince the household head	39	17.4
Role of decision-making	Husband	149	64.2
	Father-in-law	61	26.3
	Mother-in-law	22	9.5

equipment at the healthcare center, 9.1% of women strongly disagreed, 25.9% disagreed, and 34.1% were neutral. Only 18.5% agreed, and 12.5% strongly agreed.

Table 7 depicts the distribution of monthly treatment costs varied by the educational qualification of the household head. A majority of the respondents in the 501-1000 treatment cost group were among households with heads with 6-12 years of education (n=52), while those with 1-5 years of education were mainly in the 1-500 cost grouping (n=49). Treatment costs of 1001-1500 were reported by only a small number of respondents in all education groups. In general, the results indicate that the relatively higher treatment expenditures were associated with higher educational attainment of the household head, which is supported by the significant ANOVA results.

The one-way ANOVA in **Table 8** indicated that the years of schooling of the household head were significantly associated with the total cost of treatment, $F(3,228)=4.475, p=.004$.

Tukey HSD post hoc analysis (**Table 9**) indicated a significant difference only between households with heads having 1-5 years and 6-12 years of education (mean difference=-0.304, $p=.006$). There were no significant differences across the other

Table 7. Crosstabulation on educational qualification of the household and the total cost of treatment in a month

Count	Total cost of treatment in a month				Total
		1-500	501-1000	1001-1500	
		0	1-5	6-12	14
Educational qualification of the household	0	27	24	2	53
	1-5	49	26	4	79
	6-12	36	52	10	98
	14	2	0	0	2
Total		114	102	16	232

Table 8. One-way ANOVA and Tukey HSD post hoc analysis of total cost of treatment by educational qualification of the household head

Source	SS	df	MS	F	p	Interpretation
Between groups	4.927	3	1.642	4.475	.004	Significant
Within groups	83.677	228	0.367			
Total	88.603	231				

ANOVA: Analysis of variance, HSD: Honestly significant difference, SS: Sum of squares, MS: Mean square

Table 9. Tukey HSD post hoc comparisons

Comparison	Mean difference	95% CI	p	Significant
0 vs 1-5	0.098	-0.18 to 0.38	.799	No
0 vs 6-12	-0.206	-0.47 to 0.06	.192	No
0 vs 14	0.528	-0.60 to 1.66	.621	No
1-5 vs 6-12	-0.304	-0.54 to -0.07	.006	Yes
1-5 vs 14	0.430	-0.69 to 1.55	.754	No
6-12 vs 14	0.735	-0.39 to 1.85	.327	No

HSD: Honestly significant difference, CI: Confidence interval

education groups (all $p>.05$). The study findings showed that the treatment costs were significantly different depending on the educational attainment of the head of the household, and that the significant difference was mainly between the 1-5 years and 6-12 years education groups.

DISCUSSION

In this study, respondents faced various barriers, which are discussed below in the context of Bronfenbrenner's Socio-ecological Model.¹⁵

Individual Level

The findings of this study revealed a statistically significant relationship between educational attainment and postpartum healthcare utilization ($p=0.006$). This highlights the

Table 6. Institutional barriers regarding infrastructure and service delivery of the healthcare center

Situation of the caregiving center	Responses									
	1		2		3		4		5	
	n	p (%)	n	p (%)	n	p (%)	n	p (%)	n	p (%)
Doctors and nurses are available at your nearest healthcare center	22	9.5	75	32.3	71	30.6	64	27.6	None	
Healthcare providers are supportive and understanding	20	8.6	66	28.4	75	32.3	42	18.1	29	12.5
Healthcare providers can easily identify the health problems	45	19.4	79	34.1	69	29.7	39	16.8	None	
The behavior of healthcare providers is satisfactory	29	12.5	66	28.4	71	30.6	38	16.4	28	12.1
Healthcare providers are sufficient in number	None		43	18.5	68	29.3	84	36.2	37	15.9
The necessary equipment is sufficient in healthcare center	21	9.1	60	25.9	79	34.1	43	18.5	29	12.5

Code: 1) strongly disagree 2) disagree 3) neutral 4) agree 5) strongly agree

important role of informational awareness in influencing postpartum healthcare-seeking behavior at the interpersonal level. Additionally, most of the respondents were illiterate or primary educated. None of the respondents was tertiary educated. Moreover, the majority (57.8%) did not access any postpartum care despite experiencing physical complications during the postpartum period, indicating a lack of motivation among women to seek maternity healthcare services during this time. This result aligns with previous studies, which found that educated women are more likely to pursue maternal services due to better health literacy, gender autonomy, and financial decision-making capacity.²² Furthermore, female education plays a vital role in shaping maternal and child health outcomes,²³ and because of the lack of motivation, many mothers did not see postpartum visits as necessary unless complications arose.²⁴

Interpersonal Level

This study highlights major socio-economic barriers that hinder women's access to maternity healthcare during the postpartum period. A significant number (44.8%) reported a lack of social support, emphasizing ongoing gaps in postpartum care networks. Decision-making autonomy was also a key barrier for women seeking postpartum care. Additionally, economic hardship was widespread, affecting 57.3% of women. During financial struggles, nutritional deficiencies were common, with most women indicating that financial constraints (72.8%) and large household sizes (10.8%) were the main obstacles, revealing interpersonal vulnerabilities in postpartum healthcare use. These results align with earlier research indicating that emotional and practical support after childbirth greatly increases women's engagement with healthcare services, especially in resource-limited settings.²⁵ However, many husbands do not prioritize postpartum care, financial support, or follow-up visits.²⁶ Additionally, religious norms discourage women from visiting male-dominated or mixed-gender health facilities.^{27,28}

Community Level

The study's findings identified several demographic factors that hinder participants' access to maternity healthcare. The average distance was about 2 miles, with travel time approximately 40 minutes, reflecting the perceived availability of community healthcare centers. Most participants rated this poorly, indicating a link between limited community healthcare services and barriers to postpartum healthcare utilization. Additionally, people in the slum community were not aware of maternal healthcare services. Moreover, in the slum community, religious beliefs were shown to have a clear impact on healthcare use, with 24.1% citing that their faith in purdah prevented access to maternity services during this time. These findings are similar to those of other studies, which have highlighted the importance of community-level support in reducing emotional distress and encouraging uptake.²⁶ Other studies also highlight that community and religious norms often influence healthcare utilization.²⁶⁻²⁸

Institutional Level

The current study found a statistically significant link between satisfactory behavior among healthcare professionals and postpartum healthcare utilization ($p=0.031$). This

indicates that the interpersonal and communication skills of healthcare providers are crucial for encouraging service use at the institutional level. Additionally, there was a marginally significant association between the adequacy of medical equipment and healthcare service utilization ($p = 0.078$). A highly significant relationship was also observed between quality of care and postpartum healthcare utilization ($p=0.001$), which aligns with the institutional findings. Respondents reported receiving inadequate care from healthcare providers. A shortage of skilled professionals was also a key factor. This aligns with other studies that found a lack of quality services to be a barrier to accessing maternity health care services.^{7,29,30}

Policy Level

The aim of the National Health Policy 2011 was to ensure universal access to primary healthcare, including maternal and child health services. However, findings from this study indicate that, despite the high incidence of complications, only 42.7% of the participants sought formal medical assistance, while a larger portion (57.3%) managed the health issues without accessing postpartum maternity care. Further, the findings of this study also revealed that 58.2% of women suffer from postpartum maternal health issues, while only 7.8% utilize professional healthcare. Moreover, the aim of the Digital Health Strategy of Bangladesh 2021 was to use ICT to improve access to and the quality of healthcare. But this study found that among the participants, (21.1%) were illiterate, (37.5%) were primary educated, and (41.4%) were secondary level educated. A majority of the participants were primarily educated and weren't aware of postpartum maternity healthcare utilization. In addition, the years of schooling of the household head were significantly associated with the total cost of treatment, $F(3,228)=4.475$, $p=.004$. Furthermore, significant differences were only seen between the 1-5 years and 6-12 years education groups; interventions, instead of broad education-based policies, should be targeted at the least educated households. These findings align with other studies that have found that Bangladesh has national maternal health policies; they are frequently poorly enforced.³¹ Additional years of schooling significantly improve household welfare, particularly among poorer households, where the marginal returns to education are greatest.³²

Limitations

This study has some limitations. The cross-sectional design restricts detailed interpretation. In addition, since the study was only conducted in Khulna city and only included those respondents who had given birth within the last year, it may not fully represent all slum-dwelling mothers in Bangladesh.

CONCLUSION

In this study, mothers living in slums faced various barriers at the individual, interpersonal, community, institutional, and policy levels. The findings of this study have several policy implications. First, to overcome these barriers, the government needs to implement the National Health Policy 2011 and the Digital Health Strategy of Bangladesh 2021. Second, interventions should focus on strengthening the health system, promoting women's independence in

accessing healthcare, providing economic support, and increasing health education and awareness among women in slum areas. Third, this study may inform policies toward SDG 3 by 2030 to promote maternal health and well-being during the postpartum period in slum communities. Finally, significant differences were only seen between the 1-5 years and 6-12 years education groups; interventions, instead of broad education-based policies, should be targeted at the least educated households.

ETHICAL DECLARATIONS

Ethics Committee Approval

This study was conducted with the approval of the Ethics Committee of the Researches and Innovation Center at Khulna University (Date: 12.03.2025, Decision No: KUECC-2025-03-24).

Informed Consent

Written informed consent was obtained from all individual participants prior to their inclusion in the study. Participants were fully informed about the study's aims, procedures, potential risks and benefits, and their rights-including the right to withdraw at any time without consequence. All participants voluntarily signed a written informed consent form.

Peer Review Process

This manuscript was subject to external peer review.

Conflict of Interest

The authors declare no conflicts of interest related to this study.

Financial Disclosure

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Author Contributions

Concept: MHM; Design: MHM; Data Collection and Entry: MHM; Literature Search: MHM; Writing Draft: MHM; Supervising: ERD; Writing: ERD; Critical Review: ERD.

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