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Research Paper

Assessment of Maternal Health Status of Pregnant Women at Rangpur Medical College and Hospital, Bangladesh: A Descriptive Cross-Sectional Study

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Abstract

Maternal health is a crucial aspect of public health, particularly in low- and middle-income countries like Bangladesh, where access to quality prenatal care remains uneven. Understanding the health status of pregnant women helps identify gaps in antenatal services and supports targeted interventions. This descriptive cross-sectional study aimed to evaluate the health status of pregnant women at Rangpur Medical College and Hospital (RMCH), Bangladesh. A total of 40 pregnant women were selected through non-probability sampling over a period of six months. Data were collected using semi-structured questionnaires and face-to-face interviews, focusing on antenatal care, obstetric, and sociodemographic characteristics. The majority of participants were aged 24–28 years, with 97.5% being housewives. All participants were vaccinated against tetanus, and 78% had attended at least three antenatal check-ups. Statistical analysis revealed a significant association between age and antenatal visits ($p<0.004$) as well as gravida ($p<0.002$). Additionally, 2.5% of respondents reported co-morbidities such as hypertension, some of whom also experienced pregnancy-related complications despite receiving antenatal care, highlighting the need for more targeted interventions for at-risk mothers. The study underscores the need for heightened focus on high-risk pregnancies, particularly among older women (aged 35 years and above) and those with co-morbid conditions. Using chi-square tests, the statistical importance (*p-values*) was evaluated to identify correlations among variables. In conclusion, the results emphasise the value of prenatal care and vaccinations in reducing threats to the health of both the mother and the foetus. Enhancing maternal health requires bolstering prenatal health services and putting in place focused surveillance of high-risk populations. Enhanced knowledge, prompt interventions, and resource allocation are suggested by the research as ways to lessen pregnancy-related problems in comparable healthcare environments.

Introduction

Although maternity is a natural and essential part of life, it significantly affects the health of both mothers and babies. Globally, 99% of the 515,000 maternal deaths each year due to pregnancy and childbirth complications occur in underdeveloped countries (Adalia et al., 2021). With a maternal mortality ratio (MMR) of 450 deaths per million live births in these regions, there is a critical need for improved obstetric care (Alakma et al., 2016).

Pregnancy-related wellbeing results are unequivocally connected to natural components and the accessibility of high-quality restorative care. Ten to twelve percent of pregnant women encounter issues such as frailty, hypertension, toxemia, and UTIs (Abalos et al., 2014). These issues emphasize the require for a comprehensive wellbeing care framework that gives quality pre-birth care, crisis obstetric care, and successful family arranging (Lassi et al., 2016). A few maternal health issues still endure in Bangladesh, such as preventable maladies such as postpartum hemorrhage (PPH), which altogether increment maternal mortality and incapacity (Khan et al., 2006). The capabilities of health experts to oversee vaginal births have been improved through viable instruction in standard conveyance procedures, such as simulation-based instruction, which progresses results for both moms and newborns (Devimaya et al., 2025).

Given the critical role that women play in competitive endeavors, maternal health is an essential aspect of advancement in society. The health and life of women depend on their medical care; so, does the welfare of the offspring they produce. Pregnancy-related problems claim the lives of about 580,000 women worldwide each year: the continent of Sub-Saharan Africa accounts for roughly half of them (WHO, 2003; Abouzahr and Wardlaw, 2007). In contrast to 1 in 2800 in affluent nations, women in this area have a lifetime risk of 1 in 16 of dying from pregnancy- or childbirth-related causes (Ronsmans and Graham, 2006). By creating affluence, promoting women's health is essential given their complete economic involvement and enhances the condition of society as a whole.

Improving pregnancy outcomes can be achieved successfully by increasing antenatal care (ANC). ANC is defined by the WHO as the medical attention prior to conception that a pregnant woman gets, which includes assessment, learning, counselling, therapy for small illnesses, and vaccinations (villar, j., Bergsjo, 2002). To ensure the health of the mother and baby during pregnancy, labour, and the postpartum phase, ANC is essential for lowering maternal morbidity and mortality (Kuhnt and Vollmer, 2017). A key indicator of maternal health service utilization,

the use of ANC is the percentage of pregnant women who receive custody from qualified medical providers a minimum of once while in their period. This is because ANC protection has a major effect on mothers' health by facilitating the identification of issues, prompt measures, and the promotion of healthy behaviors in pregnancy (Tikmani et al., 2019). Inadequate sanitation, rural-urban inequality, loneliness, and a shorter lifespan from sickness are some of the factors that frequently hinder breastfeeding in numerous nations, notably Bangladesh (Koblinsky et al., 1999). In developing countries, wherein issues linked to pregnancy become an important driver of dying, maternal mortality is still large considering its significance (Bauserman et al., 2020). With a maternal mortality rate of 260 per 100,000 live births (Mmr, 2022). For instance, Pakistan has about 30,000 women deaths per year as a result of problems during deliveries (Shaeen et al., 2022). The WHO recommends at least four ANC visits during pregnancy (Who/Mps, 2007), yet only 37% of mothers in low-income areas adhere to this guideline (Esopo et al., 2020), revealing a significant gap in effective prenatal care.

Proper nutrition during pregnancy is crucial as the fetus relies entirely on maternal nutrient intake for growth and development (Marshall et al., 2022). Pregnancy-related nutritional deficiencies raise the chance of low birth weight and infant death (Black et al., 2013). Positive pregnancy results depend on appropriate weight increase that is matched to the mom's size and pre-pregnancy weight (Siega-Riz et al., 2009). Increased caloric needs—an additional 340–452 calories per day during the second and third trimesters (Rasmussen et al., 2009)—along with a balanced intake of macronutrients and micronutrients, are essential for fetal health (Dror and Allen, 2018). Key nutrients such as proteins, carbohydrates, fats, vitamins A, D, and B-complex, and minerals like calcium and iron are vital (JC, 2000). Adequate hydration and safe food handling are also critical to prevent foodborne illnesses and support optimal fetal development (Shahnia et al., 2012). To guarantee that mother and fetus get enough nutrition, food recommendations must take economic status, social norms, and personal dietary requirements into account (Bhutta et al., 2013a).

Poor ingestion of the nutrients iron, iodine & folic acid may result in serious consequences like anaemia, low birth weight, and retarded growth, making malnutrition a significant issue in nations with moderate to low incomes (Adepoju and Allen, 2019). Fortified foods and multivitamin supplementation have to be done because these hazards are increased when pregnancy-related treatment and necessary nutrients are not easily accessible (Lassi et al., 2013).

To avoid a lack of iron anemia, which is common in the latter months of being pregnant, getting enough iron is essential, beginning in the sixteenth week of pregnancy (Peña-Rosas et al., 2012). It has been demonstrated that physiotherapist measures, especially gynaecological physical therapy, greatly enhance the standard of pregnancy and the safety of birth, in addition to nutrition and medical attention. A new study about Bangladesh has shown that abdominal muscle workouts and grassroots physical activity can improve maternal medical results. For example, strengthening the pelvic floor muscles combined with ergonomic guidance is being demonstrated to enhance the comfort of living in newlyweds (Akhter et al., 2025), and grassroots collaboration is known to be beneficial in treating chronic low back pain among older women (Akter et al., 2024). These results highlight how crucial it is to incorporate physical therapy into prenatal care plans.

A further significant precaution is immunisation during pregnancy, which provides immunity to tetanus in both mothers and new-borns and may lower morbidity and mortality from other illnesses that can be prevented by vaccination (Blencowe et al., 2010; Tangcharoensathien et al., 2015). With mother antigens, vaccines give babies a passive defence (Omer and Jamieson, 2017). Notwithstanding all of this, pregnant women and healthcare professionals continue to be reluctant to acquire vaccines, which emphasises the necessity of focused outreach efforts and greater public awareness (Larson et al., 2014).

Mother's well-being also depends on cleanliness at home. Effective habits like regularly washing your hands and appropriate recycling of trash lower the risk of infections, which are more common as a mom because of alterations in the immunological and biological systems (Rhee et al., 2008). Prevention efforts are necessary to encourage healthy habits since inadequate sanitation may result in problems such as illnesses related to food, cavities, and infections of the prostate (Hill et al., 2007).

There are serious hazards associated with pregnancy-related illnesses such as anaemia, hypertension, gestational diabetes, and thyroid issues (Marshburn, 2015). For instance, premature birth, pregnancy loss, and decreased growth of the baby are all associated with levothyroxine (Mearns, 2013). Optimal screening and treatment strategies for hypothyroidism are still under discussion (Korevaar et al., 2017). Women with epilepsy face additional challenges due to potential complications from antiepileptic drugs (AEDs), requiring careful monitoring and management during pregnancy (Harden et al., 2009).

The above mentioned precautions are essential for preserving the health of both the mother and the fetus, as were a healthy diet, enough sleep, and regular deliveries (Carroli et al., 2001). In order to lower maternal morbidity and mortality, particularly in countries with limited resources like Bangladesh, this study will analyze the main determinants affecting maternal health and suggest beneficial measures & methods.

The aim of this study was to assess the health status of pregnant women in Bangladesh, especially in the RMCH zone. The goals are to reduce the maternal and fetal mortality by promoting the maternal, fetal, and neonatal well-being. To decrease the level of challenges, pregnant ladies in Bangladesh need to address and diminish conditions such as iron deficiency, hypertension, condition, and PPH. Schedule pre-birth check-ups ought to moreover be helpful to avoid from complications (Begum and Hamid, 2023 Findings of this study will help to detect medical conditions of pregnant women and teach people how to avoid problems. The highlighted the need of maternal nourishment, vaccination, personal hygiene, treatment of problems, and optimal prenatal support.

Materials and Methods

This research utilized a descriptive cross-sectional design to evaluate the health status of pregnant women. The study was conducted at RMCH in Rangpur, Bangladesh, over a period of six months. The target population comprised pregnant women who were receiving care at the hospital during the study period.

Figure 1 represents the conceptual framework of this study, which illustrates the relationship between independent variables (socio-demographic variables such as age, religion, family size, educational status, occupation status, and monthly family income, as well as variables related to obstetrical characteristics including gravida, last inter-conceptional period, immunization against tetanus, and antenatal visit) and the dependent variable (health status of pregnant women). This framework guides the analysis by highlighting how these factors may influence maternal health outcomes. Participants were selected using a non-probability sampling technique, with a sample size of forty individuals determined by constraints related to time and budget. The inclusion criteria were pregnant women aged 18 to 35 years who provided informed consent to participate. Specifically, participants were eligible if they were in any trimester of pregnancy, receiving antenatal care services at RMCH during the study period, and were physically and mentally stable enough to respond to the questionnaire. Exclusion criteria included

non-pregnant individuals, males, individuals receiving medical care from facilities other than Rangpur Medical College Hospital, those with mental health issues, and individuals unwilling to provide necessary information. The upper age limit of 35 years was set based on national maternal health guidelines identifying pregnancies above this age as higher risk, necessitating focused study.

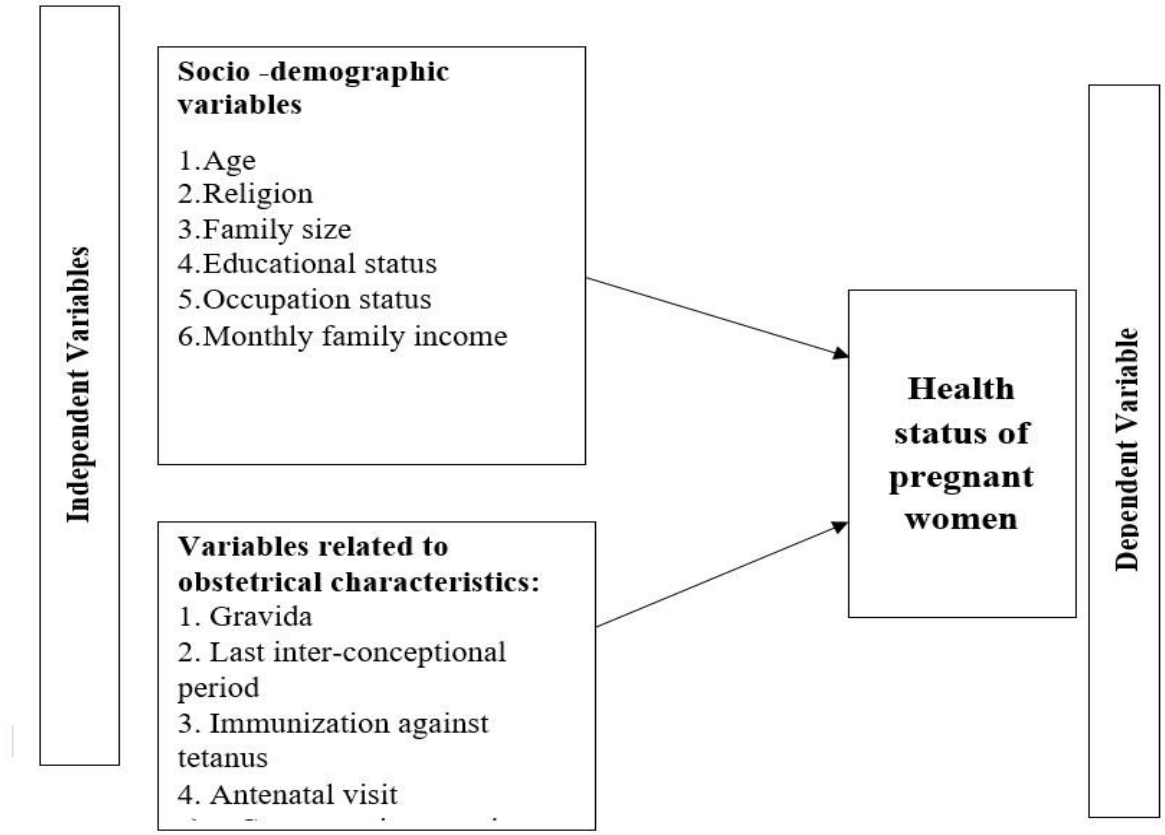

Figure 1. Fundamental foundation of the research.

Informal, prepared questions were used for gathering data. Information was gathered through direct conversations as well as anonymous surveys. The survey was carefully designed in accordance with the research objectives and developed to ensure its accuracy and reliability. Cronbach's alpha was used to assess internal consistency, with a score above 0.7 indicating reliability. Experts evaluated the validity, accuracy, and coherence of the content, and necessary revisions were made based on pilot studies. (Zahangir et al., 2017).

Prior to completing the questionnaires, all respondents gave their prior permission. Individual conversations have been employed to gather data in order to guarantee complete and

precise answers. Following gathering data, the information was checked for precision, comprehensiveness, and inner coherence. The remaining data were coded and categorised for research after missing or unreliable information was eliminated.

Microsoft Excel and SPSS software version 25.0 were used for analyzing the information. Means, standard deviations, and percentages got among the statistically significant variables used to be computed. In addition, inferential statistical tests such as Chi-square tests were used to examine associations between categorical variables (e.g., age groups and gravidity), and Pearson's correlation analyses were conducted to explore relationships between continuous variables (e.g., education level and health awareness scores), allowing for a more comprehensive understanding of factors influencing maternal health outcomes in the study population.

Results

Socio-demographic information

This study assessed the health of pregnant women who attended RMCH in Bangladesh. A total of forty pregnant women were invited to participate, with each meeting the eligibility criteria and providing informed consent for inclusion in the research. The questionnaire used in this study aimed to evaluate the sociodemographic characteristics of the respondents. The consideration of socioeconomic characteristics of the respondents are an important aspect of the studies on health issues (Paul and Chouhan, 2020).

The majority of respondents (60%) were between 24 and 28 years old, 30% were aged 18 to 23, and the remaining 10% were in the 29 to 33 age group (Table 1). Religiously, 5% of the respondents were Hindu (n=2), while the majority, 95% (n=38), were Muslim.

Table 1: Sociodemographic Characteristics of Respondents.

Characteristic	Category	Frequency	Percent
Age	18–23 years	12	30%
	24–28 years	24	60%
	29–33 years	4	10%
Religion	Hindu	2	5%
	Muslim	38	95%
Occupation	Student	1	2.5%
	Housewife	39	97.5%
Educational Status	SSC	9	22.5%
	HSC	22	55%

Table 1 also indicates that only 2.5% of the respondents (n=1) were students, while the vast majority, 97.5% (n=39), were housewives (Begum et al., 2020). Due to the predominance of housewives in the sample (97.5%), the limited occupational variation reflects a potential sampling limitation, which may affect the generalizability of findings regarding occupational influence on maternal health. Regarding the educational status of the respondents, the majority (55%, n=22) of the respondents had completed HSC, while 22.5% (n=9) had completed SSC, and another 22.5% were graduates (Table 1).

Table 2 reveals that 62.5% of respondents had 3-4 family members, 35% had 1-2 family members, and only 2.5% had 5-6 family members.

Table 2: Number of family members in the families of the respondents

Number of family members	**Frequency**	**Percent**
1-2	14	35
3-4	25	62.5
5-6	1	2.5
Total	40	100

Figure 2 clearly shows that 52.5% of the respondents had a total household income between 21,000 and 25,000 BDT, 30% had an income between 5,000 and 20,000 BDT, and 17.5% had an income between 26,000 and 30,000 BDT.

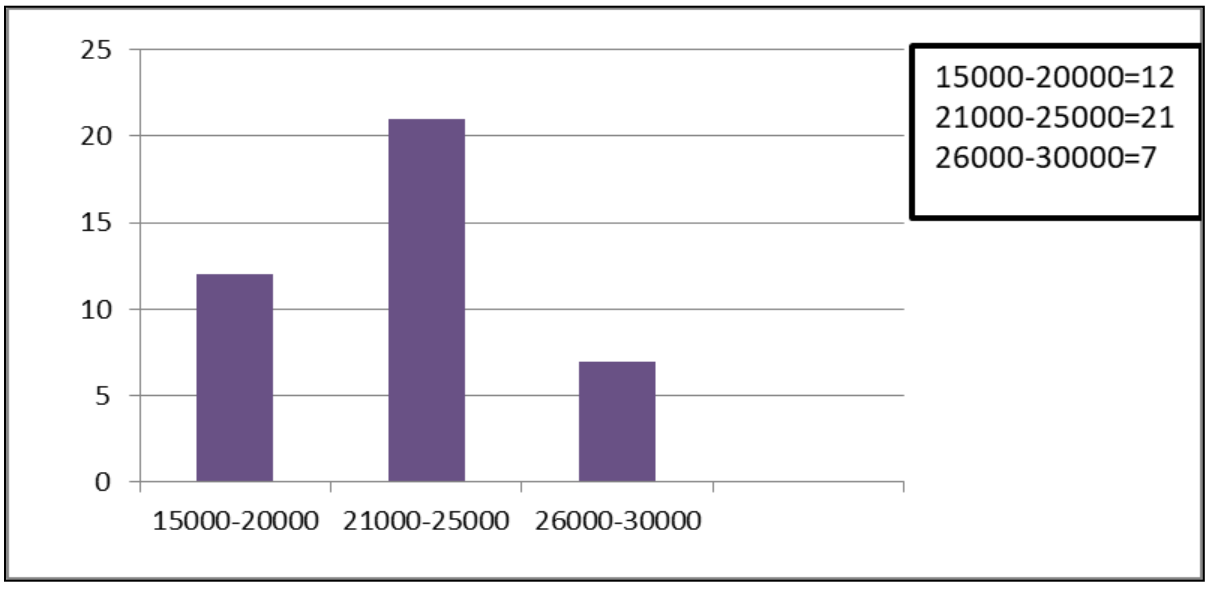

Figure 2. Monthly Family Income of respondents

Obstetrical characteristics

Respondents Gravida

Table 3 indicates that all respondents (100%) had received the tetanus vaccination.

Table 3: Immunization against Tetanus

Immunization against tetanus	Frequency	Percent
Yes	40	100
No	00	000
Total	40	100

Figure 3 shows that 27.5% of respondents were gravida once, 37.5% were gravida twice, and 35% had been gravida three times or more.

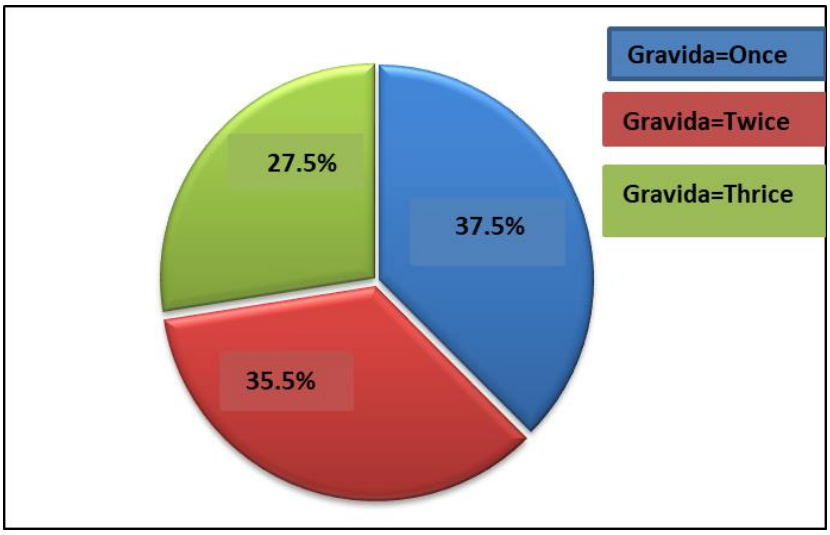

Figure 3. Respondent's gravida

Table 4 shows that all respondents (n=40) attended prenatal visits.

Table 4: Antenatal visit.

Antenatal visit	Frequency	Percent
Yes	40	100
No	00	00
Total	40	100

Antenatal check-up of the respondents

This finding is consistent with Nyongesa et al. (2023), who also reported that a majority of pregnant women attended at least three antenatal visits, indicating a positive trend in antenatal care utilization.

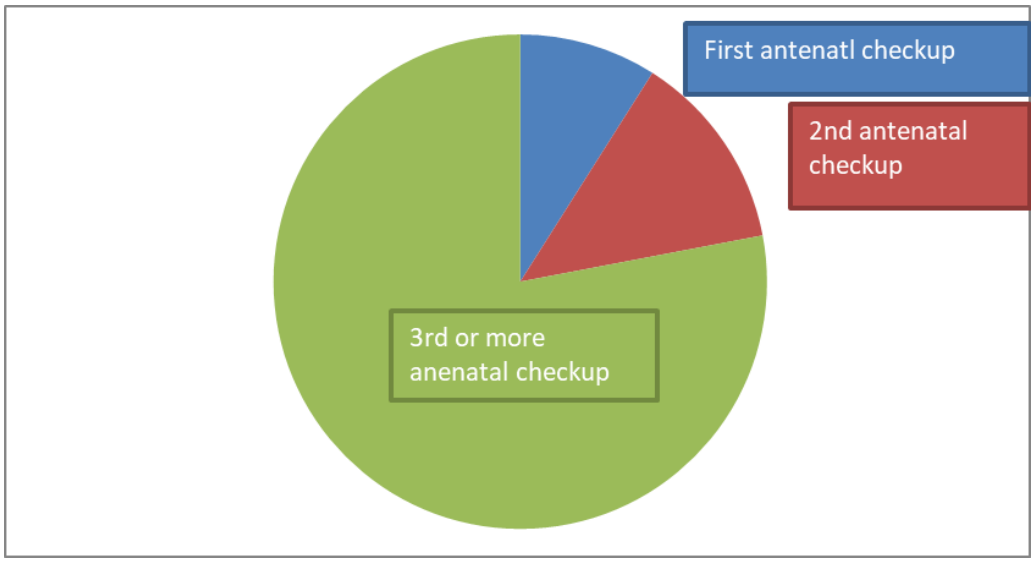

Figure 4. Antenatal checkup of the respondents

Pregnancy-related complications

Table 5 indicates that the majority of respondents, 97.5% (39 individuals), reported no pregnancy-related complications, while only 2.5% (1 individual) experienced complications. This notably high percentage may be influenced by recall bias or selection bias, as participants might underreport complications or those with severe conditions may have been underrepresented in the sample.

Table 5: History of complications during pregnancy.

Pregnancy related complications	Frequency	Percent
Yes	1	2.5
No	39	97.5
Total	40	100

Information related to co-morbidity status

Table 6 presents that most of the respondents, 97.5% (39) don't suffer from diseases, and only 2.5% of respondents reported existing medical conditions.

Table 6: Suffering from diseases

Co-morbidity status	Frequency	Percent
Yes	1	2.5
No	39	97.5
Total	40	100

Table 7: Medical Issues of Respondents.

Characteristic	Category	Frequency	Percent
Respondents Gravida	Gravida once	11	27.5%
	Gravida twice	15	37.5%
	Gravida three or more	14	35%
Immunization against Tetanus	Yes	40	100%
	No	0	0%
Antenatal Visit	Yes	40	100%
	No	0	0%
Antenatal Check-up	First time	4	9%
	Second time	5	13%
	Three or more times	31	78%

Table 8: Complications and Co-morbidity Status of Respondents.

Characteristic	Category	Frequency	Percent
Pregnancy-related Complications	Yes	1	2.5%
	No	39	97.5%
Information related to Co-morbidity	Yes	1	2.5%
	No	39	97.5%
Suffering from Diseases	Yes	1	2.5%
	No	39	97.5%

Interrelation between socio-demographic variables and gravida of pregnant women

Table 9 reveals that the highest proportion of gravidas, 68%, were in the age group of 24-28 years, whereas the lowest proportions, 16%, were observed in the age groups of 18-23 and 29-34 years. A statistically significant association was found between age group and gravida status of respondents ($\chi^2 = 16.62$, $p < 0.002$) (Haque et al., 2016).

Table 9: Association between age and gravida of pregnant women.

Age Group	Gravida (Once)	Gravida (Twice)	Gravida (Thrice or more)	Total
18-23	10	2	0	12
24-28	5	10	9	24
29-34	0	2	2	4
Total	15	14	11	40

Chi-square (χ^2) = 16.62, p-value = 0.002

Table 10 indicates that among the 97.5% of women who attend antenatal visits, those in the age group of 29-34 years represent a relatively low percentage. There is a statistically significant association between the frequency of antenatal visits and the age group of respondents ($\chi^2 = 22.12$, $p < 0.004$) (Kareem et al., 2021).

Table 10: Association between age and antenatal visit.

Age Group	First Visit	Second Visit	Thrice or More Visits	Total
18-23	1	2	7	10
24-28	3	1	18	22
29-34	1	2	5	8
Total	5	5	30	40

Chi-square (χ^2) = 22.12, p-value = 0.004

Table 11 shows that there was no statistically significant correlation between the respondent's occupation and their gravida status (Maulenkul et al., 2024). However, the statistical power of this analysis is limited due to low variation in occupational status, as 97.5% of the participants were housewives. This homogeneity may have affected the reliability of the association test and is acknowledged as a limitation of the study.

Table 11: Association between occupation and gravida of pregnant women.

Occupation	Gravida			Total	Chi-square (x^2)	p-value
	Once	Twice	Thrice or more			
Student	01	00	00	1	1.71	0.89
House wife	14	14	11	39		
Total	14	14	11	40		

Discussion

Maternal health is crucial for the well-being of a developing fetus during pregnancy. Timely prenatal care is vital for improving maternal health and facilitates the early detection, treatment, and management of conditions that could negatively impact pregnancy outcomes. Conversely, inadequate prenatal and medical care significantly increases risks for both mothers and their unborn children (Bhutta et al., 2013a).

This study, conducted at RMCH, Bangladesh, aimed to assess the health status of pregnant women attending the facility. Utilizing a descriptive cross-sectional design, the research was carried out over six months from September to February. Forty individuals in all were chosen with care, and information about their medical state was acquired via surveys and personal conversations. The results of the investigation tackle problems with morbidity and mortality in Bangladesh and advance knowledge of maternal and foetal health problems (Mehrabadi et al., 2012). Ten percent of those who took part were elderly primiparous women, a demographic that accounts for a sizable share of maternal fatalities in underdeveloped nations. This emphasizes the significance of focused treatments in such a susceptible population, which may lessen negative consequences (Smith et al., 2003).

Additionally, the research discovered that 27.5% of those surveyed had multiple and 73.5% had one or two prior deliveries. Gravidity and ages were shown to be significantly correlated ($\chi^2 = 16.62$, $p < 0.002$). According to this study, age has a significant impact on gravidity trends and could guide prospective medical interventions. Everyone in the study went to prenatal checkups, but not all of them finished all four appointments that the WHO recommends (Kulik et al., 2016). Age category and the quantity of prenatal checkups were significantly correlated ($\chi^2 = 22.12$, $p < 0.004$), while age and gravidity were significantly correlated ($\chi^2 = 16.62$, $p < 0.002$). This disparity calls for more research to determine the barriers to complete adherence to WHO guidelines, which

may include problems with availability or knowledge. According to the research, only 2.5% of those surveyed claimed pregnancy-related difficulties, while 97.5% recorded none at all, probably as a result of routine prenatal care. According to a comparable study conducted in Pakistan, there are serious maternal health problems, such as an MMR of 1 in 38 as opposed to 1 in 230 in Sri Lanka (Haan et al., 2008; Bernis et al., 2003). The research's fewer cases of complications when contrasted with Pakistan highlight the possible benefits of routine prenatal care and provide a template for enhancing maternal health conditions in the area. Every year, Pakistan experiences over 30,000 maternal deaths due to problems associated with childbirth, and 300,000 more women become disabled as a result of insufficient prenatal and postoperative treatment (Bhutta et al., 2013b).

Majority of the participants (78%) in the current research finished their 4th prenatal visit, 13% their second, and 9% had their initial visit. Research underscores the importance of adhering to recommended prenatal and postnatal care to ensure maternal and neonatal health (Choudhury and Ahmed, 2011). The high completion rate of the fourth checkup (78%) is a positive indicator of healthcare engagement, though the 9% completing only the first visit suggests a need for enhanced follow-up support. According to the Pakistan Demographic and Health Survey (2008–09), 65% of mothers sought initial antenatal care, but only 26% completed the recommended four visits. Postnatal care within 42 days postpartum is crucial for physical exams, post-delivery care, breastfeeding support, and immunization. All respondents in this study received tetanus toxoid immunization, aligning with findings from India, where 90.4% of pregnant women received two doses of the vaccine (Lodha, 2022). This universal immunization coverage is a commendable public health achievement, potentially contributing to the low complication rates observed by preventing maternal and neonatal tetanus and reducing infection-related morbidity and mortality among pregnant women and infants (Roper et al., 1947). According to UCSF Health, high-risk complications occur in 6 to 8 percent of pregnancies and often require specialized care (Panaitescu et al., 2021).

In this study, 2.5% of respondents experienced conditions such as hypertension, hypothyroidism, anemia, or asthma, while 97.5% had no such complications. This low prevalence of co-morbidities may reflect effective prenatal screening and management, though it contrasts with global estimates and merits further exploration. Vaidya et al. noted that screening exclusively high-risk pregnancies missed approximately 30% of women with hypothyroidism (Vaidya et al.,

2015). Thyroid disorders affect about 4% of pregnancies, with clinical hypothyroidism present in 0.3 to 0.7% and subclinical hypothyroidism affecting 2 to 3% of pregnant women (Polak, 2011; Sharma et al., 2017). Comparing and contrasting this study's findings with related research reveals both similarities and differences. The high antenatal visit completion rate of 78% in this study contrasts with (Lee et al., 2023), who found limited improvements in health outcomes among low-income clients despite nursing interventions, suggesting that RMCH's approach may be more effective due to targeted prenatal care. However, the 2.5% complication rate aligns with the low incidence of severe health issues in (Lane et al., 2015), where only 10% of CAPS patients showed suboptimal responses to anti-IL-1 therapy, indicating that both studies demonstrate effective management of specific health conditions. Unlike Lane et al.'s focus on chronic inflammatory conditions, this study's low co-morbidity prevalence (2.5%) may reflect better prenatal screening, though the lack of significant behavioral change in Lee et al.'s nutritional intervention highlights a potential area for improvement in sustaining long-term health benefits at RMCH. These insights suggest that while RMCH excels in immediate care delivery, sustained interventions could further enhance outcomes.

Conclusion

Important information about the health of expectant patients receiving care at RMCH in Bangladesh is provided by this research. A large number of those involved were housewives, aged around 24 and 28, and had a range of academic histories, from high school diplomas to doctoral degrees. According to the results, 78% of those surveyed completed the suggested amount of prenatal appointments, and 97.5% of the participants experienced no problems related to pregnancy. All of the respondents also got prenatal treatment. The need for adjusting healthcare techniques to diverse demographics was highlighted by the research's finding of a strong correlation between participants' age, number of pregnancies, and frequency of antenatal sessions. Furthermore, the reality that each individual got the tetanus shot shows how effective healthcare initiatives are at avoiding tetanus in mothers and newborns. The primary purposes of the research were to examine the well-being of expectant mothers, find related sociodemographic and obstetrician characteristics, and gauge the use of prenatal care facilities. The findings are in line with those goals. These findings show the efficacy of current maternal health initiatives and highlight important areas that need more emphasis and backing from the government, instead of simply noting favorable results. It confirms the strong impact of sociodemographic characteristics

and access to medical care on maternal medical results, which is in line with studies conducted in other emerging economies. Reducing maternal illness and death, especially for populations at risk like older primigravida women and those with comorbid conditions like hypothyroidism and anaemia, requires improving broad healthcare for moms, which includes both early pregnancy and afterwards offerings. These efforts are essential not only in Bangladesh but also in other resource-constrained settings aiming to improve maternal health indicators.

Recommendations

Based on the study's findings, following recommendations are proposed to improve maternal health understanding and care:

1. Develop and implement structured, community-based health education programs to enhance pregnant women's awareness of their health conditions and promote informed decision-making regarding antenatal and postnatal care.
2. Disseminate the study's results broadly across academic, clinical, and policymaking platforms to inform and improve healthcare practices, ensuring that evidence-based insights guide maternal health interventions.
3. Initiate additional educational and awareness campaigns through mass media and community outreach to support the health and well-being of expectant mothers, with special attention to vulnerable groups such as elderly primigravida women and those with chronic conditions.
4. Conduct further multidisciplinary and longitudinal research to refine and advance maternal health management strategies, focusing on identifying region-specific risk factors and evaluating the effectiveness of existing healthcare policies.
5. Integrate physiotherapy and rehabilitation interventions throughout the entire pregnancy to support normal delivery and promote a healthy pregnancy, including tailored exercises to enhance pelvic strength, improve posture, and reduce pregnancy-related discomforts, ensuring comprehensive care for expectant mothers.

Declaration of Competing Interest

The authors declare no competing interests related to the publication of this article. Additionally, this research has not been submitted to or published in any other journal.

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