Assessment of Knowledge on Key Pregnancy Risk Factors among Primipara Mothers in West Bengal

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Abstract: This descriptive study assessed the knowledge of 60 primipara mothers in West Bengal regarding antenatal risk factors like gestational diabetes, hypertension, advanced maternal age, and anaemia. Using a structured questionnaire, findings indicated a significant knowledge gap, with 68.33% unaware of key risks. Socioeconomic and educational backgrounds greatly influenced awareness; lower-income and less-educated mothers showed particularly poor knowledge. Only 31.67% had heard of gestational diabetes, and 18.33% recognized complications of advanced maternal age. The study highlights the urgent need for educational interventions to improve awareness and promote better maternal-fetal health outcomes, particularly among socioeconomically disadvantaged groups. The study reveals a significant knowledge gap among primipara mothers in West Bengal regarding antenatal risk factors. Socioeconomic and educational backgrounds greatly influence awareness. Urgent educational interventions are essential to enhance understanding and promote better maternal-foetal health outcomes, especially for socioeconomically disadvantaged populations.

Keywords: Primipara mothers, Antenatal period, Pregnancy risk factors, Knowledge.

Research Paper

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1. INTRODUCTION

Pregnancy is a transformative journey filled with anticipation, excitement, and profound physical and emotional changes. However, it is also a period that comes with its own set of unique challenges, especially for primiparous mothers—those who are pregnant for the first time. Navigating this life stage requires not only emotional and practical preparation but also a clear understanding of the potential risks that can arise during pregnancy. Various factors, such as gestational diabetes, hypertension, advanced maternal age, and anaemia, can significantly impact the health and well-being of both the mother and the developing baby. Gestational diabetes, a condition characterized by elevated blood sugar levels during pregnancy, poses risks such as excessive birth weight and complications during delivery. Hypertension, or high blood pressure, can lead to preeclampsia, a dangerous condition that can affect multiple organ systems and may result in preterm birth. Advanced maternal age, particularly in women over 30, increases the likelihood of complications like chromosomal abnormalities and other pregnancy-related challenges. Anaemia, marked by low levels of red blood cells, can lead to fatigue, weakness, and potential developmental issues for the foetus. For primipara mothers, understanding these risks and receiving proper guidance is critical to ensuring a safer pregnancy and promoting

healthier outcomes. Knowledge about these risk factors empowers mothers to make informed decisions, adopt preventive measures, and seek appropriate medical care, ultimately fostering a positive pregnancy experience. Pregnancy poses significant health risks globally, with approximately 810 women dying daily from preventable causes related to childbirth, according to the World Health Organization (WHO). Gestational diabetes affects about 10% of pregnancies, impacting around 21 million women annually, and increasing risks for complications like preeclampsia.

Hypertensive disorders, including gestational hypertension, affect 10-15% of pregnancies worldwide and are a leading cause of maternal deaths, particularly in low-income countries. The trend of delaying childbirth has led to an increase in pregnancies among women over 30, with U.S. data indicating a 16% rise in birth rates for this age group since 2007. Advanced maternal age is associated with higher risks, including gestational diabetes and chromosomal abnormalities. Additionally, anaemia affects an estimated 40% of pregnant women globally, often leading to maternal fatigue and low birth weight. These statistics underscore the urgent need for enhanced awareness and education regarding pregnancy risk factors. Empowering women with knowledge is crucial for improving maternal and foetal health

Peer Review Process: The Journal "Middle East Research Journal of Nursing" abides by a double-blind peer review process such that the journal does not disclose the identity of the reviewer(s) to the author(s) and does not disclose the identity of the author(s) to the reviewer(s).

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outcomes, ultimately reducing maternal mortality rates. This study aims to assess the knowledge of primipara mothers in West Bengal, addressing critical gaps in maternal healthcare and contributing to the broader dialogue on maternal health education.

1.1 Problem Statement:
"A Study to Assess Knowledge of Selected Pregnancy Risk Factors among Primipara Mothers in a Community Area of West Bengal."

1.2 Objectives:
1. Evaluate the awareness of pregnancy risk factors among primipara mothers in West Bengal.
2. Identify gaps in awareness regarding gestational diabetes, hypertension, advanced maternal age, and anaemia.
3. Analyse the impact of socio-demographic factors on knowledge levels.
4. Provide recommendations for targeted educational interventions to improve awareness.

1.3 Need for the study:
The increasing complexity of maternal healthcare necessitates a deeper understanding of pregnancy risk factors, particularly among primipara mothers. With approximately 810 women dying daily from preventable causes related to pregnancy and childbirth, addressing knowledge gaps is imperative. Conditions such as gestational diabetes, hypertension, advanced maternal age, and anaemia can lead to severe complications if not recognized and managed promptly. Many communities, especially in low-income regions, lack adequate information about these critical risk factors. Research indicates that women unaware of their risks are less likely to seek timely medical intervention, resulting in adverse health outcomes for both mothers and infants. This study aims to assess the knowledge of primipara mothers in West Bengal, identifying specific areas where education is lacking to inform healthcare providers about the urgent need for tailored educational programs. Empowering women with knowledge enhances their ability to make informed health decisions, ultimately improving pregnancy outcomes. By highlighting the importance of understanding these risk factors, this research contributes to the broader goal of enhancing maternal and fetal health, reducing maternal mortality and morbidity in the region. The findings will lay the groundwork for future educational interventions and public health initiatives aimed at fostering a healthier community.

1.4 Review of Literature:
The prevalence of high-risk pregnancies among Indian women was 49.4%, with 33% of women having a single high-risk, and 16.4% having multiple high-risk pregnancies. Notably, pregnant women from Meghalaya and Manipur states had 67.8% and 66.7% with one or more high-risk factors, respectively. About 31.1% of women had short birth spacing, and 19.5% of women had adverse birth outcomes during the last birth. Logistic regression analysis showed that women with no education (adjusted odds ratio (AOR) = 2.02; 95% confidence interval (CI) = 1.84-2.22) and the poorest wealth quintile (AOR = 1.33; 95% CI = 1.04-1.29) had significantly higher odds of having HRP than those with higher education and the highest wealth quintile, respectively (Periyasamy Kuppusamy, Ranjan kumar, (2023). The prevalence of pregnancy induced hypertension was 33(7.9%); of which 5(15.2%) were gestational hypertension, 12 (36.4%) were mild preeclampsia, 15(45.5%) were severe preeclampsia and 1 (3%) eclampsia. Positive family history of pregnancy induced hypertension [AOR5.25 (1.39–19.86)], kidney diseases (AOR 3.32(1.04–10.58)), having asthma [AOR 37.95(1.41–1021)] and gestational age (AOR 0.096(0.04-.23)) were predictors of pregnancy induced hypertension. (Tesfaye Abera Gudeta, Tilahun Mekonnen Regassa, 2019). 156 studies with 7 506 061 pregnancies were included, and 50 (32.1%) showed a low or medium risk of bias. In studies with no insulin use, when adjusted for confounders, women with gestational diabetes mellitus had increased odds of caesarean section (odds ratio 1.16, 95% confidence interval 1.03 to 1.32), preterm delivery (1.51, 1.26 to 1.80), low one minute Apgar score (1.43, 1.01 to 2.03), macrosomia (1.70, 1.23 to 2.36), and infant born large for gestational age (1.57, 1.25 to 1.97). (Wenrui Ye, Cong Luo, Jing Huang 2022). There was a significant overall improvement in the hemoglobin levels of pregnant women during the follow-up (10.3–10.72 gm %). About 35.6% of the women had maternal or foetal morbidity. Anaemia was one of the main pregnancy-related complications (62.3%), other complications include difficult labor (3%), postpartum hemorrhage, and preeclampsia 1.6% each abortions/stillbirth (3.5%). The foetal complications include low birth weight (25.5%) followed by premature delivery (0.2%) and birth asphyxia (0.5%). (Ravishankar Suryanarayana, Muninarayana Chandrappa (2017).

1.5 Proposed Approach:
This descriptive study will utilize a cross-sectional survey design to assess the knowledge of antenatal risk factors among primipara mothers in West Bengal. A structured questionnaire will be developed to gather data on participants' awareness of gestational diabetes, hypertension, advanced maternal age, and anaemia. The study will recruit 60 primipara mothers from a selected community using convenience sampling. Descriptive statistics will be employed to analyse the data, highlighting knowledge gaps and the influence of socioeconomic and educational factors. The findings will inform the development of targeted educational interventions to enhance maternal health awareness.

1.6 Value of Research:
This research will highlight critical knowledge gaps regarding antenatal risk factors among primipara mothers in West Bengal, emphasizing the need for

targeted educational interventions. By empowering mothers with essential information, the study aims to improve maternal and foetal health outcomes, reduce complications during pregnancy, and contribute to informed health decision-making, ultimately enhancing overall community well-being.

1.7 Hypothesis:

H0: There is no significant association between the history of diabetes before pregnancy, employment status, antenatal visits, and the awareness of gestational diabetes among primipara mothers in West Bengal.

H1: There is a significant association between the history of diabetes before pregnancy, employment status, antenatal visits, and the awareness of gestational diabetes among primipara mothers in West Bengal.

2. MATERIAL AND METHODS

2.1 Research Design: Non-experimental descriptive design.

2.2 Setting: Community area in West Bengal.

2.3 Population: Pregnant Primi mothers.

2.4 Sample: Pregnant Primi mothers in community area, West Bengal.

2.5 Sample size: 60

2.6 Sampling Technique: Non-probability sampling technique.

2.7 Sampling Criteria:
Inclusion Criteria:
Participants must be first-time mothers, Must be within the reproductive age group (typically 18-35 years), Must reside in the selected community area of West Bengal, Must be willing to participate in the study and provide informed consent.

Exclusion Criteria:
Mothers who have had more than one pregnancy, Mothers who do not reside in the selected community area of West Bengal. Those who are not willing to provide informed consent for the study.

2.8 Research Variables:
Independent Variables: Socio-Demographic Factors: Age, education level, occupation, and income level of the participants. Dependent Variables: Knowledge of Pregnancy Risk Factors: Awareness and understanding of gestational diabetes, hypertension, advanced maternal age, and anaemia among primipara mothers. Demographic variables: Age, education, occupation, economic status, numbers of antenatal visits, history of chronic illness.

2.9 Development of Research Tools:
A. **Tool 1:** Socio-demographic Questionnaire for collecting the sociodemographic data. The questionnaire consists of 6 items - age, education, occupation, economic status, numbers of antenatal visits, and history of chronic illness.
B. **Tool 2:** Questionnaire on Knowledge of Gestational Diabetes among Primipara Mothers.
C. **Tool 3:** Questionnaire on Knowledge about Maternal Age Over 30.
D. **Tool 4:** Questionnaire on Knowledge about High Blood Pressure during Pregnancy.
E. **Tool 5:** Questionnaire on Overall Knowledge on Pregnancy Risk Factors.

2.10 Analysis:
Organizing data from master sheet.
Tabulation of data in terms of frequency & percentage.
Descriptive Statistics: Frequency and Percentage.
Inferential Statistics: Chi square test.

2.11 Procedure:
This study will involve 60 primipara mothers in West Bengal, using a structured questionnaire to assess knowledge of antenatal risks like gestational diabetes and hypertension. Participants will be recruited from local healthcare facilities, and informed consent will be obtained. Data will be analysed to identify knowledge gaps and inform targeted educational intervention.

Table 1: Summarizing the demographic information of the study: N = 60

Demographic Variable	Category	Frequency	Percentage
Age Group	18 and below	10	16.67%
	21 to 25 years	34	56.67%
	26 to 30 years	12	20%
	Above 30 years	4	6.67%
Religion	Hindu	45	75%
	Muslim	15	25%
Socioeconomic Status	Middle-class	25	41.67%
	Lower-class	20	33.33%
	Below poverty line	15	25%
Education Level	No formal education	13	21.67%
	Primary education	24	40%
	Secondary education	18	30%

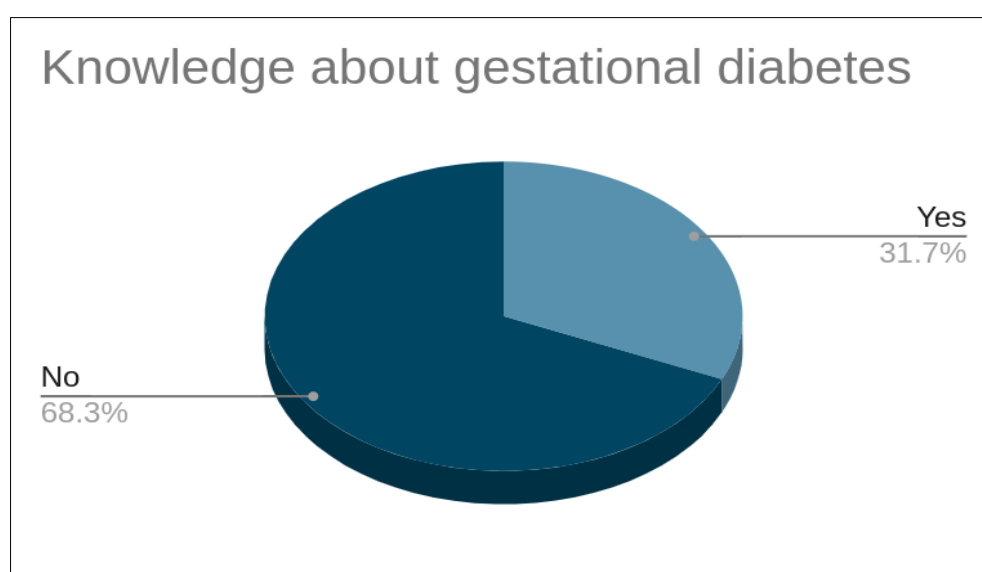| Demographic Variable	Category	Frequency	Percentage
	Higher education	5	8.33%
History of Diabetes before Pregnancy	Yes	5	8.33%
	No	55	91.67%
Employment Status	Employed	17	28.33%
	Student	6	10%
	Others	2	3.33%
	Housewife	35	58.33%
Antenatal Visits	No visits	11	18.33%
	1-2 visits	8	13.33%
	3-4 visits	24	40%
	More than 4 visits	17	28.33%

Fig. 1: Knowledge about gestational diabetes among the selected samples. N=60

3. RESULTS AND DISCUSSION

A chi-square test showed no significant relationship between age and awareness of gestational diabetes (p = 0.597). However, we found a significant association between a history of diabetes before pregnancy and awareness, as indicated by the results (7.03 > 3.841). Additionally, a significant link was noted between employment status and awareness (15.07 > 3.814) and between antenatal visits and awareness (8.733 > 3.814). Alarmingly, only 31.67% of primipara mothers in West Bengal recognized gestational diabetes or hypertension, highlighting gaps in education. While 48.33% received information from healthcare providers, better communication during antenatal visits is essential. The lack of age-related differences suggests education should reach all demographics. These findings advocate for targeted interventions and community programs to empower mothers, improving pregnancy outcomes and reducing complications.

4. CONCLUSION

In conclusion, the study highlights alarming gaps in awareness of pregnancy-related risk factors among primipara mothers in West Bengal. With only 31.67% recognizing gestational diabetes and 31.67%

aware of gestational hypertension, it's clear that current educational efforts are inadequate. The finding that 48.33% obtained information from healthcare providers suggests that improved communication and counseling during antenatal visits are essential. Notably, the lack of significant association between maternal age and awareness (p = 0.597) indicates that education must transcend age demographics. The study also reveals significant links between previous diabetes history and awareness, as well as between employment status and knowledge of gestational diabetes. These results advocate for targeted educational interventions to empower mothers with critical information, ultimately enhancing pregnancy outcomes and reducing complications. Community-based programs could bridge these knowledge gaps, fostering better maternal and fetal health through informed decision-making.

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