Student's Journal of Health Research Africa
e-ISSN: 2709-9997, p-ISSN: 3006-1059
Vol. 5 No. 12 (2024): December 2024 Issue
https://doi.org/10.51168/sjhrafrica.v5i12.1467
Original Article

PREVALENCE AND FACTORS CONTRIBUTING TO DELAYED ACCESS TO EMERGENCY OBSTETRIC CARE AMONG MOTHERS IN EASTERN INDIA: A CROSS-SECTIONAL STUDY

[1]Priti Kumari, [2]Sheela Kumari, [3]Usha Kumari*
[1]Senior Resident, Department of Obstetrics & Gynaecology, Jawahar Lal Nehru Medical College & Hospital, Bhagalpur, Bihar, India.
[2]Assistant Professor, Department of Obstetrics & Gynaecology, Jawahar Lal Nehru Medical College & Hospital, Bhagalpur, Bihar, India.
[3]HOD & Professor, Department of Obstetrics & Gynaecology, Jawahar Lal Nehru Medical College & Hospital, Bhagalpur, Bihar, India.

ABSTRACT

Background

Maternal mortality represents a significant public health challenge in underdeveloped countries, where numerous women succumb to pregnancy-related complications. Major contributing factors include delays in recognizing medical emergencies and accessing appropriate healthcare services. Analyzing these delays is essential for formulating effective strategies to enhance maternal health outcomes. This study seeks to examine the incidence rates as well as other variables that delay expecting mothers from seeking emergency care.

Methods

This cross-sectional study, conducted at Jawahar Lal Nehru Medical College & Hospital in Bhagalpur, Bihar, enrolled 120 women who sought maternity services. Data were collected using a validated questionnaire administered by trained interviewers. Statistical analysis included descriptive and multivariate logistic regression to identify factors associated with delays in seeking obstetric care.

Results

Of the 120 respondents, 86 provided consent and were interviewed, resulting in a response rate of 72%. The average delay in seeking obstetric treatment was approximately 1.5 hours, with 66.7% of participants reporting difficulty in deciding to seek care. Women aged 20-34 and those with lower educational levels experienced significantly higher delays in seeking treatment. Income, employment status, and antenatal care follow-up also influenced maternal delays.

Conclusion

The study highlights significant delays in seeking obstetric care among women, particularly in younger and less educated populations. Improving awareness and access to maternal healthcare services is essential to reduce these delays.

Recommendations

To enhance the maternity referral system, the hospital should work more closely with primary health care sub-facilities, like the liaison office. Road accessibility, quality, proximity, and modes of transit to medical institutions and the community would all be encouraged by the government. Finally, more research on the community-based study is required.

Keywords: *Maternal Health, Obstetric Care, Delays, Socioeconomic Factors, Antenatal Care.*
Submitted: *2024-11-10* ***Accepted:*** *2024-12-21*

Corresponding Author: *Priti Kumari*
Email: *pritigupta.shashi@gmail.com*
Senior Resident, Department of Obstetrics & Gynaecology, Jawahar Lal Nehru Medical College & Hospital, Bhagalpur, Bihar, India.

INTRODUCTION

Each year, a substantial number of women in underdeveloped countries succumb to complications related to pregnancy [1,2]. The issue of maternal mortality is of paramount importance and has been prioritized in the health research and policy agendas of developing nations [3,4]. Pregnancy-related fatalities are prevalent in developing countries, particularly affecting women of reproductive age. Nonetheless, timely and appropriate medical interventions can frequently avert these tragic outcomes [5].

The framework of maternal delays was introduced in the 1990s to elucidate the contextual factors contributing to

Student's Journal of Health Research Africa
e-ISSN: 2709-9997, p-ISSN: 3006-1059
Vol. 5 No. 12 (2024): December 2024 Issue
https://doi.org/10.51168/sjhrafrica.v5i12.1467
Original Article

maternal mortality. This model has been widely adopted across various nations to better understand and address the issue of maternal deaths [6,7]. It delineates three distinct stages of maternal delays [8]. The initial delay occurs when the mother, her family, or the community fails to recognize a condition that could pose a serious threat to her life. Recognizing emergencies can be especially difficult, as a large number of maternal deaths happen either during labor or within the first 24 hours of delivery. Moreover, many births occur at home with unskilled attendants, requiring some medical understanding to identify complications and react quickly to avoid negative consequences [8,9].

The second delay relates to difficulties in reaching healthcare facilities, often worsened by unfavorable weather, limited transportation options, or geographic challenges. The third delay occurs within the healthcare setting itself [8–12]. Socioeconomic as well as cultural factors significantly impede women's access to skilled maternity care, including high medical expenses, long distances to healthcare centers, lack of awareness about pregnancy-related warning signs, and a cultural preference for untrained local birth attendants [11,12]. These delays are a major factor contributing to the high maternal mortality rates in low-income nations. For instance, failing to identify an emergency can result in prolonged delays in seeking medical help. While the educational background of patients or caregivers affects their ability to recognize emergencies [7], it is not the sole determinant. Prompt intervention is essential for improving outcomes in obstetric emergencies. An important strategy to augment the health of the mother is by improving women's access to delivery services and ensuring timely medical treatment for obstetric complications [13]. This study seeks to examine the incidence rates as well as other variables that delay expecting mothers from seeking emergency care.

MATERIALS AND METHODS

Study Design

This research employed a cross-sectional design conducted at Jawahar Lal Nehru Medical College & Hospital in Bhagalpur, Bihar, over one year from January 1, 2020, to December 31, 2020.

Sample Size

The study targeted a total of 120 patients.

Inclusion Criteria

The study involved women who accessed maternity or obstetric services at the hospital. Only those who agreed to give verbal informed consent for an in-person interview were part of this study.

Exclusion Criteria

Unconscious individuals or those who were unable to respond were excluded from the study to ensure that all participants could provide informed consent and actively engage in the interview process.

Data Collection

A contextually appropriate questionnaire was created based on relevant research literature and validated by specialists in the field. Data collection was carried out by ten trained enumerators, all of whom had at least a diploma-level education and healthcare experience. These enumerators underwent a two-day training program covering the study protocol, objectives, participants' rights, and informed consent procedures. The data collection process was closely monitored by the principal investigator and co-investigators. To ensure data accuracy and relevance, each completed questionnaire was reviewed regularly for discrepancies and ambiguity.

A pilot study was carried out with 5% of the total study cohort (n=6), targeting individuals who did not reside in the study areas. This was done to assess the questionnaire's validity and reliability. To ensure consistency, the questionnaire was provided in both English and Hindi, and internal validity was strengthened by incorporating feedback from senior experts. Supervisors and data collectors received two days of training to guarantee a uniform understanding of the checklist procedures.

Statistical Analysis

To ensure data accuracy, all information was verified. Data entry was done using Epi Info 3.3.2 and analyzed in SPSS 20, with statistical significance set at $p < 0.05$. Multivariate logistic analysis was also done to examine the factors influencing maternal delays in seeking emergency obstetric care.

Ethical clearance

Informed consent was obtained from all participants before their involvement, ensuring their voluntary participation and the confidentiality of their responses.

RESULTS

Of the 120 individuals who were scheduled for interviews, 86 provided verbal consent and completed the interview, yielding a response rate of 72%. From this, 87.5% were married, 25% had finished their primary education, and 81.7% were aged between 20 and 34. The average age of the study cohort was 28.6 ± 5.2 years. In terms of parity, 84% were identified as having 2-4 children, and 92.5% were homemakers (Table 1).

Student's Journal of Health Research Africa
e-ISSN: 2709-9997, p-ISSN: 3006-1059
Vol. 5 No. 12 (2024): December 2024 Issue
https://doi.org/10.51168/sjhrafrica.v5i12.1467
Original Article

Table 1: Distribution of patients based on age and parity:

Variable	Patient count	Percentage
Age		
15-19	8	6.7%
20-34	98	81.7%
>35	14	11.7%
Parity		
P1	5	4.2%
P2, P3, P4	101	84.2%
P5	14	11.6%

The socio-economic status-based (SES) distribution of patients reveals that a significant portion, 40.0%, belonged to the lower class, while both the upper middle and upper lower classes comprised 20.8% each, and the lower middle class represented 18.3% of the respondents (Table 2). In terms of employment status, the overwhelming majority of participants were housewives, accounting for 92.5%, with a small proportion of government employees (4.2%) and businesswomen (3.3%) (Table 2). Regarding locality, 28.6% of rural respondents had booked services, compared to 30.0% of urban respondents, indicating a similar level of engagement with healthcare services in both areas (Table 3).

Table 2: Distribution of patients based on their SES and employment status

Variable	Patient count	Percentage
Socio-economic Class		
Upper middle class	25	20.8%
Upper lower class	25	20.8%
Lower middle class	22	18.3%
Lower class	48	40.0%
Employment status		
Homemaker	111	92.5%
Public servants	5	4.2%
Entrepreneurs	4	3.3%

Table 3: Bookings According to Localities

Locality	Booked	Unbooked	Patient count
Rural	30 (28.6%)	75 (71.4%)	105
Urban	36 (30.0%)	84 (70.0%)	120

Of the participants, 80 (66.7%) reported difficulty in deciding whether to get emergency obstetric care. The average delay in seeking treatment was approximately 90 minutes, ranging from 20 min to 16 hrs. On account of decision-making concerning receiving care at the hospital, the study revealed that it was often made by the woman herself (47.5%), her spouse (30%), other family members (15%), or neighbors (7.5%). Moreover, 28% of participants did not consult traditional birth attendants (TBAs) or other healthcare providers before seeking care at the health centers, while 72% had done so.

Through the use of multivariate logistic regression, factors linked to initial maternal delays in seeking obstetric care were identified for variables with a p-value of <0.2 in the bivariate analysis. Maternal delay in seeking obstetric care was not significantly related to marital status, parity, or consultation with TBAs and health facilities before seeking care. However, compared to women aged 15-19, those aged 20-34 were 2.0 times more prone to experience delays (adjusted odds ratio [AOR], 2.0; 95% confidence interval [CI], 1.4–4.4), and women aged 35-49 were 3.5 times more susceptible (AOR, 3.5; 95% CI, 2.0–5.5). Compared to women with higher education, illiterate mothers were approximately 4.5 times more likely to delay seeking care (AOR, 4.5; 95% CI, 3.0–10.0). Housewives were also more likely to experience delays than students (AOR, 2.8; 95% CI, 1.2–6.0). Women belonging to the lower class had higher chances (2.2 times) of delaying the decision to receive care than those from the upper class (AOR, 2.2; 95% CI, 1.2–5.0). Additionally, delays were about 3.5 times more common among women who did not receive antenatal care

(ANC) in contrast to those who did (AOR, 3.5; 95% CI, 2.8–7.0).

DISCUSSION

In this study, the average delay in getting emergency obstetric care was 90 minutes, with 66.7% of participants facing challenges in deciding to seek treatment. This delay is notably shorter compared to research in Bahir Dar, where 37.8% of women delayed care (mean delay: 8 hours), and at the Surat Municipal Institute of Medical Education and Research (MIMER), which reported delays in 57.73% of cases [5,18].

Interestingly, 30% of respondents indicated that their husbands were responsible for deciding whether to seek obstetric care or not. This observation strongly aligns with the fact that a greater number of patients (85%) had antenatal care (ANC) follow-up, which provided them with more comprehensive knowledge about obstetric and delivery warning signs compared to their partners, highlighting the influence of family dynamics in decision-making regarding obstetric care.

This study found that 15% of participants did not receive ANC follow-up, which is lower than the 35.05% reported in the SMIMER study but higher than the 11.1% in a study conducted in Tanzania [4,18]. These differences reflect regional disparities in access to prenatal care.

Additionally, significant associations were found between the delays of expecting mothers in seeking emergency obstetric care and factors such as maternal age, education level, annual family income, and ANC follow-up. This is consistent with findings from Bahir Dar, where educational background, income, and ANC follow-up also played a significant role in maternal delays [18]. In this study, 25% of participants experienced delays in obtaining emergency obstetric care, which is lower than the 59.7% delay reported in an Ethiopian study comprised of uneducated and rural women [19]. This finding is also quite promising when compared to the 71% reported at a public tertiary teaching hospital [20]. These results suggest that while maternal delays are a widespread issue, their extent varies across different populations.

CONCLUSION

The findings of this study emphasize the significance of understanding intraocular pressure (IOP) outcomes and identifying key risk factors influencing surgical success in glaucoma management. The multivariate analysis revealed that previous glaucoma surgeries and lens status, particularly in patients with aphakia, are critical determinants of treatment failure. Notably, needling procedures demonstrated a positive impact on both qualified and complete surgical success rates. Additionally, a high incidence of postoperative complications was observed, particularly early on, emphasizing the need for vigilant postoperative care. These insights contribute valuable data to the ongoing discourse on optimizing surgical interventions in glaucoma patients, highlighting areas for future research and clinical improvement.

Limitations

The study is limited by its short duration and small sample size.

Recommendation

To enhance the maternity referral system, the hospital should work more closely with primary health care sub-facilities, like the liaison office. Road accessibility, quality, proximity, and modes of transit to medical institutions and the community would all be encouraged by the government. Finally, more research on the community-based study is required.

Acknowledgment

To all the participants for their cooperation and patience.

Data Availability

Data is available upon request.

Author contributions

All authors contributed to the design of the research. PK collected and analyzed the data. SK and UK wrote the manuscript. PK edited the paper. All authors read and approved the paper.

List of Abbreviations

SES- socio-economic status
TBA- traditional birth attendant
AOR- adjusted odds ratio
CI- confidence interval
ANC- antenatal care

Source of funding

No source of funding.

Conflict of interest

The author declares no conflict of interest.

REFERENCES

1. Ganchimeg T, Ota E, Morisaki N, Laopaiboon M, Lumbiganon P, et al. Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multicountry study. BJOG. 2014;1: 40-48. https://doi.org/10.1111/1471-0528.12630
2. Worku AG YA, Afework MF. Maternal complications and women's behavior in seeking care from skilled providers in North Gondar,

Ethiopia. PLoS ONE. 2013; 8: 3. https://doi.org/10.1371/journal.pone.0060171

3. DRamos S, Karolinski A, Romero M, Mercer RA. Comprehensive assessment of maternal deaths in Argentina: translating multicentre collaborative research into action. Bull World Health Organ. 2007; 8: 615-622. https://doi.org/10.2471/BLT.06.032334
4. Tessema GA, Laurence CO, Melaku YA, Misganaw A, Woldie SA, et al. Trends and causes of maternal mortality in Ethiopia during 1990-2013: findings from the Global Burden of Diseases study 2013. BMC Public Health. 2017; 17: 160. https://doi.org/10.1186/s12889-017-4071-8
5. Pacagnella RC, Cecatti JG, Osis MJ, Souza JP. He role of delays in severe maternal morbidity and mortality: expanding the conceptual framework. Reprod Health Matters. 2012; 20: 155- 163. https://doi.org/10.1016/S0968-8080(12)39601-8
6. HDddeus S, Maine D. Too far to walk: maternal mortality in context. Soc Sci Med. 1994; 8: 1091-1110. https://doi.org/10.1016/0277-9536(94)90226-7
7. Barnes-Josiah D, Myntti C, Augustin A. He three delays as a framework for examining maternal mortality in Haiti. Soc Sci Med. 1998; 46: 981-983. https://doi.org/10.1016/S0277-9536(97)10018-1
8. Mgawadere F, Unkels R, Kazembe A, Van den Broek N. Factors associated with maternal mortality in Malawi: application of the three delays model. BMC Pregnancy Childbirth. 2017; 17: 219. https://doi.org/10.1186/s12884-017-1406-5
9. Nour NM An introduction to maternal mortality. Rev Obstet Gynecol. 2008; 1: 77-81.
10. Shah N, Hossain N, Shoaib R, Hussain A, Gillani R. Sociodemographic characteristics and the three delays of maternal mortality. J Coll Physicians Surg Pak. 2009; 19: 95-98.
11. Syed U, Khadka N, Khan A, Wall S. Care-seeking practices in South Asia: using formative research to design program interventions to save newborn lives. J Perinatol. 2008; 2: S9-13. https://doi.org/10.1038/jp.2008.165
12. Soma-Pillay P, Pattinson RC. Barriers to obstetric care among maternal near misses. S Afr Med J. 2016; 106: 1110- 1113. https://doi.org/10.7196/SAMJ.2016.v106i11.10726
13. Koblinsky M. Reducing maternal and perinatal mortality through a community collaborative approach: an introduction to a special issue on the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP). J Midwifery Womens Health. 2014; 591: S1-5 https://doi.org/10.1111/jmwh.12174
14. Worku Awoke KS. Maternal delays in utilizing institutional delivery services, Bahir Dar, Ethiopia Health. 2013; 5. https://doi.org/10.4236/health.2013.56137
15. Dayalal VA MS, Megha M. Study of delays in maternal mortality. 2016; 7: 64-66.
16. Khan N, Pradhan MR. Identifying factors associated with maternal deaths in Jharkhand, India: a verbal autopsy study. J Health Popul Nutr. 2013; 31: 262-271. https://doi.org/10.3329/jhpn.v31i2.16391
17. Cham M, Sundby J, Vangen S. Maternal mortality in the rural Gambia, a qualitative study on access to emergency obstetric care. Reprod Health 2: 3. https://doi.org/10.1186/1742-4755-2-3
18. Tita AT, Selwyn BJ, Waller DK, Kapadia AS, Dongmo S, et al. Evidence-based reproductive health care in Cameroon: a population-based study of awareness, use, and barriers. Bull World Health Organ. 2005; 83: 895-903.
19. Ayalew Tiruneh, G., Melkamu Asaye, M., Solomon, A. A., & Tiruneh Arega, D. (2021). Delays during emergency obstetric care and their determinants among mothers who gave birth in South Gondar zone hospitals, Ethiopia. A cross-sectional study design. Global health action, 14(1), 1953242. https://doi.org/10.1080/16549716.2021.1953242
20. Wanaka, S., Hussen, S., Alagaw, A., Tolosie, K., & Boti, N. (2020). Maternal Delays for Institutional Delivery and Associated Factors Among Postnatal Mothers at Public Health Facilities of Gamo Zone, Southern Ethiopia. International journal of women's health, 12, 127-138. https://doi.org/10.2147/IJWH.S240608

Student's Journal of Health Research Africa
e-ISSN: 2709-9997, p-ISSN: 3006-1059
Vol. 5 No. 12 (2024): December 2024 Issue
https://doi.org/10.51168/sjhrafrica.v5i12.1467
Original Article

PUBLISHER DETAILS:

Student's Journal of Health Research (SJHR)
(ISSN 2709-9997) Online
(ISSN 3006-1059) Print
Category: Non-Governmental & Non-profit Organization
Email: studentsjournal2020@gmail.com
WhatsApp: +256 775 434 261
Location: Scholar's Summit Nakigalala, P. O. Box 701432, Entebbe Uganda, East Africa