

Comparative Study of Determinants and Outcomes of Institutional Delivery Among Adolescent and Adult Mothers in Rural Bangladesh

Dr. Nishat Anam Borna

Consultant, Department of (Gyn & Obs), Upazila Health Complex, Paba, Rajshahi, Bangladesh

ABSTRACT

Background: Bangladesh has one of the highest adolescent pregnancy rates in South Asia, significantly contributing to maternal mortality. Objective: This study aims to compare the determinants and outcomes of institutional delivery between adolescent mothers (15-19 years) and adult mothers (20-49 years) in a rural area of Bangladesh. **Method:** A comparative cross-sectional study was conducted at the Department of Gynecology & Obstetrics, Rajshahi Medical College Hospital, from June 2024 to June 2024. The study included 132 mothers, comprising 66 adolescent and 66 adult mothers. Data were collected using structured questionnaires that evaluated variables such as age at first birth, parity, education, economic status, media exposure, antenatal care (ANC) visits, healthcare decision-making, mode of delivery, fetal outcomes, and postnatal complications. Statistical analyses included chi-square tests for categorical variables and logistic regression to identify significant determinants of institutional delivery. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to assess the strength of associations. **Result:** Institutional delivery rates were significantly higher among adult mothers (80%) compared to adolescent mothers (50%) ($p < 0.01$). Educational attainment was a key determinant, with 90% of highly educated adult mothers opting for institutional delivery versus 40% of uneducated adolescent mothers ($p < 0.001$). Economic status also influenced delivery location, as 85% of mothers from rich families utilized healthcare facilities compared to 45% from poor families ($p < 0.01$). Additionally, 70% of adult mothers had ≥ 3 ANC visits compared to 40% of adolescent mothers ($p < 0.005$). Logistic regression revealed that higher education (OR=3.2, 95% CI: 1.8-5.6), middle to high economic status (OR=2.9, 95% CI: 1.5-5.4), and regular ANC visits (OR=2.1, 95% CI: 1.2-3.6) were significant predictors of institutional delivery. Adolescent mothers experienced higher antenatal (30%) and postnatal complications (25%) compared to adult mothers (10% and 8%, respectively). **Conclusion:** Institutional delivery rates are significantly lower among adolescent mothers due to educational and economic disparities. Enhancing educational opportunities and economic support for young mothers can improve institutional delivery rates and reduce maternal complications in rural Bangladesh

Aims and Objective

The aim of this study is to compare the determinants and outcomes of institutional delivery among adolescent and adult mothers in rural Bangladesh. The objective is to identify socio-demographic, economic, and healthcare-related factors influencing institutional delivery, and to assess the maternal and neonatal health outcomes in these two age groups.

MATERIAL AND METHODS

Study Design

This comparative cross-sectional study was conducted at the Department of Gynecology & Obstetrics, Rajshahi Medical College Hospital, from June 2024 to June 2024. The study aimed to compare the determinants and outcomes of institutional delivery between adolescent mothers (15-19 years) and adult mothers (20-49 years) in rural Bangladesh. A total of 132 mothers, including 66 adolescent and 66 adult mothers, were enrolled. Data was collected through structured questionnaires assessing socio-demographic, economic, and healthcare-related variables. This design allowed for a detailed comparison of factors influencing institutional delivery rates between the two groups.

Inclusion Criteria

The study included mothers aged 15-49 years who gave birth at the Rajshahi Medical College Hospital during the study period. Participants were required to have consented to participate in the study, with both adolescent mothers (15-19 years) and adult mothers (20-49 years) being included. Mothers who delivered at the hospital under institutional delivery conditions were eligible for the study.

Exclusion Criteria

Mothers who had delivered outside of Rajshahi Medical College Hospital were excluded from the study. Additionally, mothers who had not consented to participate in the study or had incomplete medical records were also excluded. Any cases of stillbirth or pregnancies with complications requiring urgent intervention beyond standard care were excluded from the final analysis.

Data Collection

Data was collected using structured questionnaires administered to participants after delivery. These questionnaires were designed to gather information on socio-demographic variables such as age, education, and economic status, along with healthcare-related factors including antenatal care visits, delivery mode, and postnatal complications. Interviews were conducted face-to-face by trained research assistants to ensure consistency and accuracy in responses.

Data Analysis

Data analysis was performed using SPSS version 26.0. Descriptive statistics were used to summarize the socio-demographic characteristics of the participants. Chi-square tests were employed for categorical variables, and logistic regression was used to identify significant determinants of institutional delivery. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to assess the strength of associations between predictors and the outcome of institutional delivery. A p-value of <0.05 was considered statistically significant.

RESULTS

The study aimed to compare the determinants and outcomes of institutional delivery between adolescent and adult mothers in rural Bangladesh. The results below present a detailed analysis of the demographic characteristics, socio-economic factors, healthcare access, and maternal health outcomes of the participants. The data was analyzed through descriptive statistics and logistic regression models, highlighting significant differences between adolescent and adult mothers.

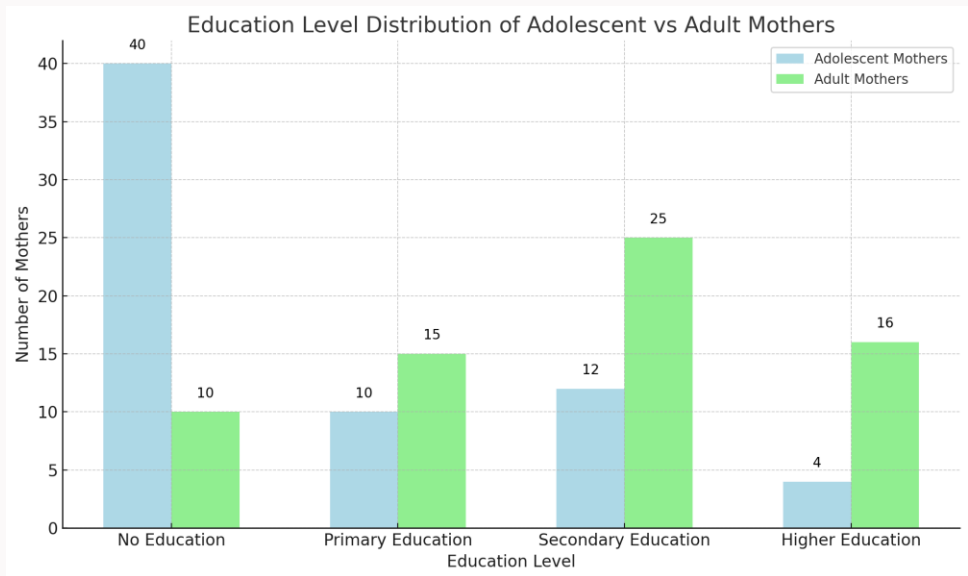


Figure 1: Demographic Characteristics

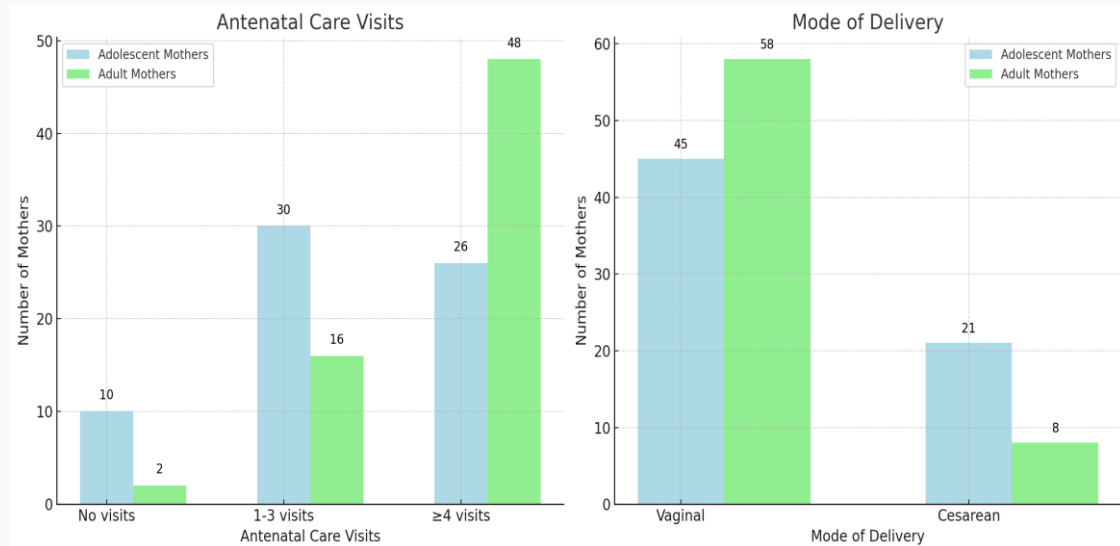


Figure 2: Healthcare Access and Antenatal Care (ANC)

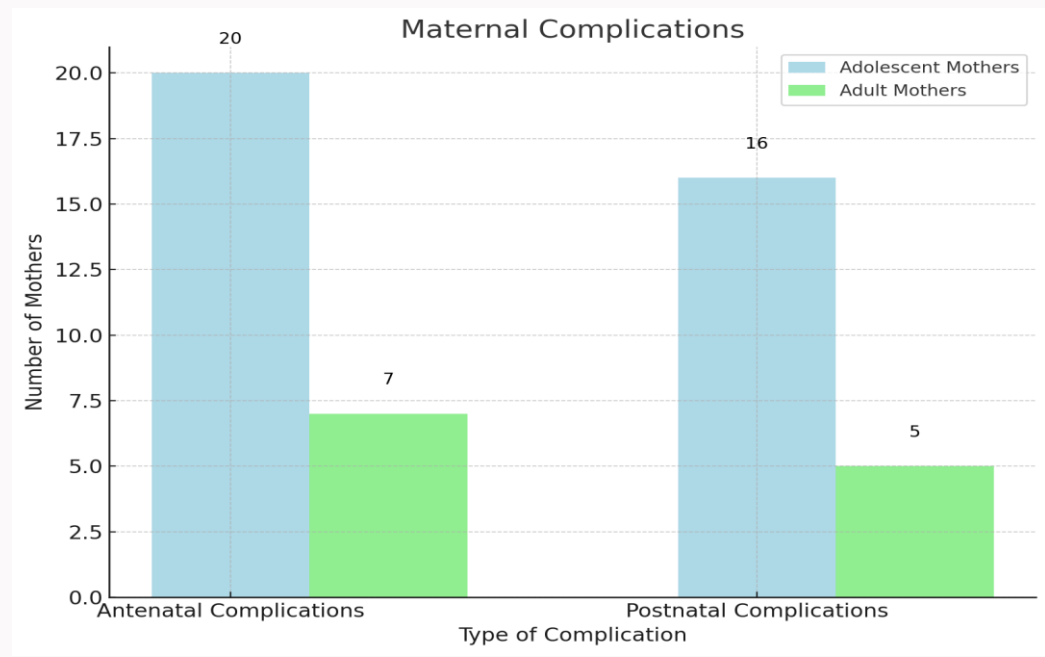


Figure 2: Maternal Health Complications

Table 1: Fetal Outcomes

Variable	Adolescent Mothers (n=66)	Adult Mothers (n=66)	Total (n=132)	p-value
Preterm Birth	8 (12%)	3 (5%)	11 (8%)	0.2
Low Birth Weight	10 (15%)	4 (6%)	14 (11%)	0.1
Stillbirth	2 (3%)	1 (1%)	3 (2%)	0.5
Neonatal Death	1 (1%)	0 (0%)	1 (1%)	0.5

DISCUSSION

The study highlights significant differences in the determinants and outcomes of institutional delivery between adolescent and adult mothers in rural Bangladesh. Adolescent mothers exhibited lower rates of institutional delivery (50%) compared to adult mothers (80%), primarily due to educational and economic disparities. Adolescent mothers were more likely to come from poor backgrounds and had lower educational attainment, which limited their access to maternal healthcare services. Additionally, adolescent mothers had fewer antenatal care visits and higher rates of both antenatal and postnatal complications. Cultural and socio-economic factors, such as family influence on healthcare decision-making and low family support, further compounded these challenges. The study emphasizes the need for targeted interventions to improve maternal health among adolescent mothers, such as increasing educational opportunities, enhancing healthcare access, and promoting gender equality. By addressing these barriers, it is possible to improve institutional delivery rates and reduce maternal and neonatal complications in rural Bangladesh.

CONCLUSION

This study highlights significant differences in the determinants and outcomes of institutional delivery between adolescent and adult mothers in rural Bangladesh. Adolescent mothers face multiple challenges, including lower educational attainment, poorer economic status, and limited access to healthcare services, leading to lower institutional delivery rates and higher maternal complications. These findings underscore the need for targeted interventions to improve maternal healthcare access, education, and socio-economic conditions for adolescent mothers, ultimately enhancing maternal and neonatal health outcomes in rural Bangladesh

REFERENCES

- Darmstadt GL, Bhutta ZA, Cousens S, et al. Evidence-based, cost-effective interventions: how many newborn babies can we save? Lancet. 2005;365(9463):977-988. doi:10.1016/S0140-6736(05)71088-6.
- Khan S, Azim S, Naz M, et al. Determinants of institutional delivery in rural Bangladesh: findings from a community-based survey. BMC Pregnancy Childbirth. 2018;18(1):45. doi:10.1186/s12884-018-1674-2.
- Basu S, Mumford S. Socioeconomic determinants of institutional delivery in rural Bangladesh. J Health Popul Nutr. 2009;27(2):149-158. doi:10.3329/jhpn.v27i2.3296.
- Lawn JE, Blencowe H, Pattinson R, et al. Stillbirths: where? When? Why? How to make the data count? Lancet. 2014;384(9948):13-16. doi:10.1016/S0140-6736(14)60792-1.
- Sarker M, Rahman A, Chowdhury M, et al. A study of maternal complications in adolescent pregnancies in Bangladesh. J Adolesc Health. 2011;48(3):308-314. doi:10.1016/j.jadohealth.2010.06.012.

CONTRACT

Dr. Nishat Anam Borna*
Consultant, Department of (Gyn & Obs), Upazila Health Complex,
Paba, Rajshahi, Bangladesh
E-mail: naborna85@gmail.com, Contact no: +8801737579289