

# **A Comparative Study on Fetomaternal Outcome of Pregnancy Between Adolescent and Adult Women**

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## ABSTRACT

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**Introduction:** Over 13 million adolescent girls (10-19 years old) give birth yearly, with 9 out of 10 births in underdeveloped countries. Pregnancy and delivery complications kill most young women in developing countries. This study aims to investigate adverse obstetric outcomes in adolescents compared with adult pregnancy in a tertiary-level hospital located in Dinajpur, Bangladesh.

**Methods:** The investigation included all pregnant patients delivered at M. Abdur Rahim Medical College Hospital, Dinajpur, from June 2018 to November 2018. The study group was divided into adolescent and adult women. The data were collected through a primary survey using a semi-structured questionnaire.

**Results:** The results indicated that pregnant teenage women have a lower literacy rate than adults, which was statistically significant. It was statistically significant that more adolescent mothers (87.2%) come from rural regions than adults (77%). This study shows that lower socioeconomic groups have higher teenage pregnancies, although the result was insignificant. In adolescents and adults, the incidence of convulsion was 33.3% and 31.1%, respectively though the result was not significant. The occurrence of infants with low birth weight was higher among teenagers (74.4%) than among adults (67.2%), although the result was insignificant. In addition, the findings demonstrate that pregnant adolescents are at a greater risk for anemia, convulsion, and low birth weight. In addition, they are more likely to give birth vaginally than older primigravida, although the result was insignificant.

**Conclusion:** This study suggests that raising the age of matrimony and motherhood and providing appropriate antenatal care for girls may improve their health and nutrition and reduce their newborns' health risks.

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## Introduction

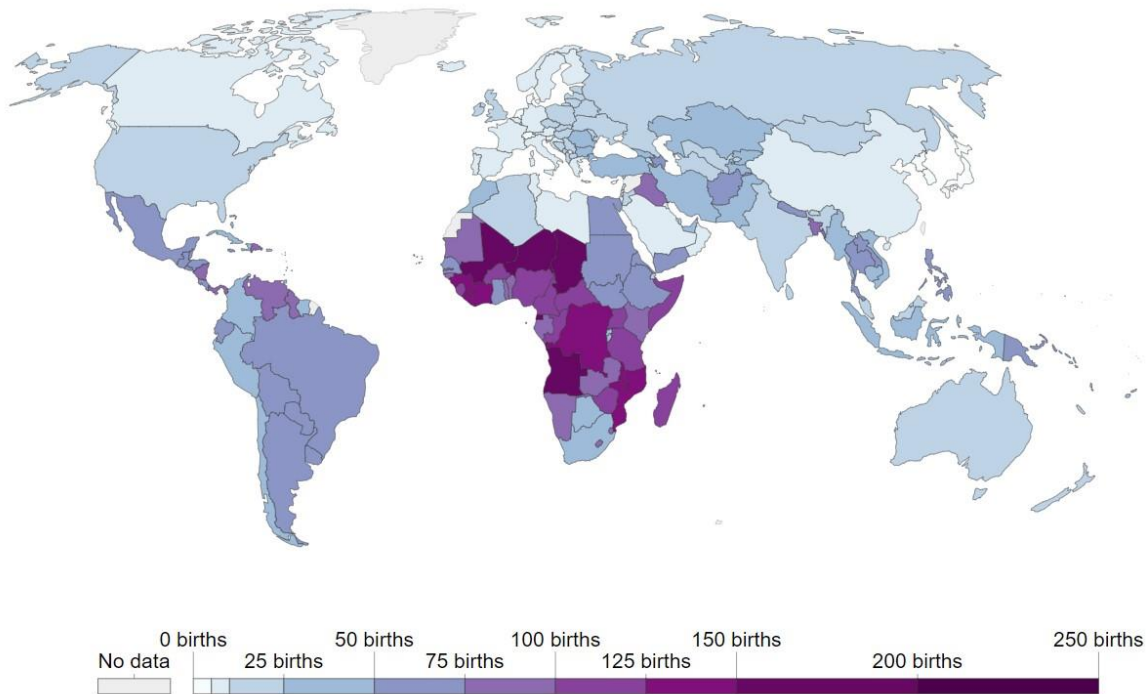
Pregnancy and delivery are events that are universally admired. Pregnancy is a biological condition of anxiety in the body that increases a woman's susceptibility to several ailments and diseases<sup>1,2</sup>. According to the World Health Organization (WHO), one female dies each minute from pregnancy and labor-related problems, and one in ten births globally is to a mother who is still a kid<sup>3-6</sup>. Globally, adolescent pregnancy (ages 10 to 19) is a significant issue, with the largest incidence rates occurring in underdeveloped nations<sup>7-9</sup>. According to the WHO, adolescence is the phase of human development and growth that follows infancy and precedes maturity<sup>3</sup>. It is a crucial transitional period in life and is marked by a rapid rate of development. Due to the swift progress and growth of the developing body, adolescents have increased dietary requirements<sup>11</sup>. Due to adolescent biological immaturity, the body is frequently unprepared to prolong pregnancy and safely deliver the fetus<sup>12,13</sup>. The amalgamation of deprived nourishment and premature childbirth exposes young females to dangerous health risks throughout pregnancy and delivery, comprising reproductive tract damage, pregnancy-related complications such as anemia, preterm labor, perinatal and neonatal mortality, maternal mortality, cephalopelvic disproportion, and low birth weight<sup>14-18</sup>.

According to the WHO, pregnancy and childbirth-related problems account for almost half a million fatalities annually<sup>19</sup>. In such regions, adolescents are frequently subjected to many of the same severe conditions as their adult counterparts. Yet, the maternal mortality rate for females aged 15 to 19 in underdeveloped countries is twice that of older women<sup>8,20</sup>. About 13 million adolescent females have childbirth annually, with over nine out of ten deliveries occurring in underdeveloped nations<sup>20,21</sup>. In developing countries, complications on or after pregnancy and delivery are the main cause of mortality for young females aged 15 to 19 years old<sup>7,22</sup>. Figure 1 presents the global adolescent birth ratio per 1,000 women aged 15-19 years old<sup>10</sup>.

Numerous studies have demonstrated that adverse pregnancy outcomes are more prevalent in pregnant women than adults. Compared to adult pregnancies, adolescent pregnancies can present distinct difficulties and risk factors<sup>23</sup>. In addition to the regular difficulties of negotiating the developmental tasks of adolescence, pregnant adolescents must adapt to the obligations and demands of becoming a parent<sup>24,25</sup>. Adolescent pregnancy is connected with unfavourable birth outcomes, such as increased chances of obstetric difficulties, lower birth weight newborns, and maternal mortality<sup>26,27</sup>. Moreover, young moms with poor social and economic situations and prospects are more likely to encounter parenting challenges and subsequent pregnancies during adolescence<sup>28</sup>. Mental illness is a key related morbidity of adolescent pregnancy<sup>29</sup>. Compared to adult women, teenagers who become pregnant are substantially more likely to suffer from prevalent mental problems<sup>30,31</sup>. Figure 2 presents the unfavourable maternal and neonatal consequences of adolescent pregnancy.

## Adolescent birth rate per 1,000 women aged 15-19, 2016

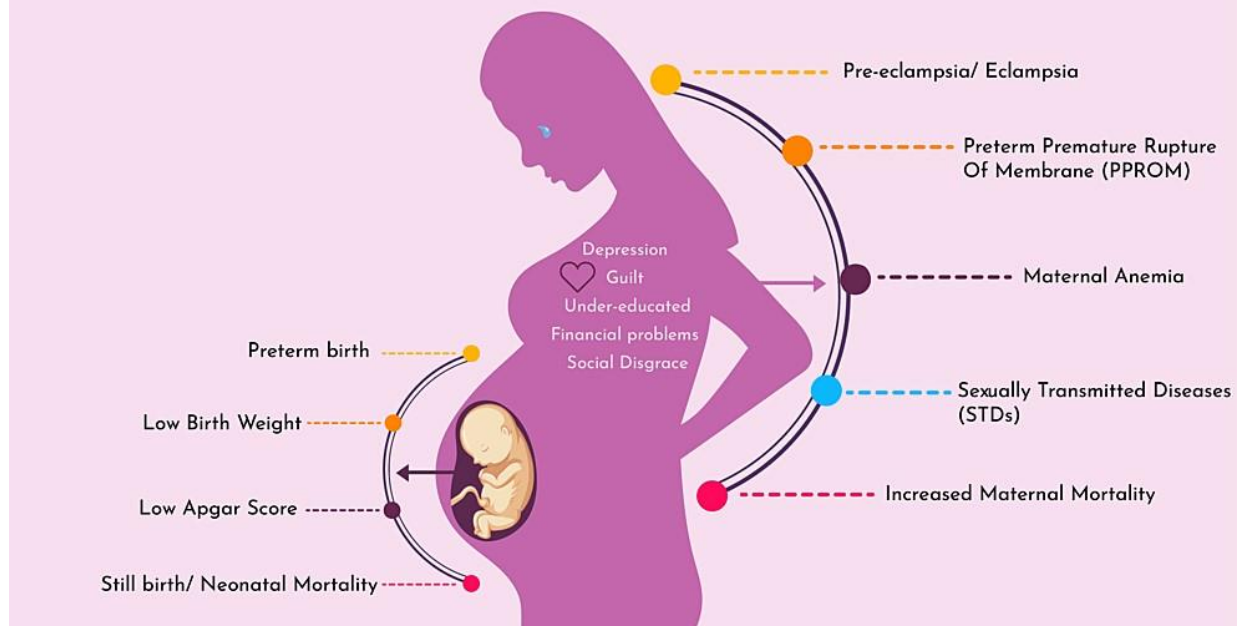
Adolescent fertility rate is the number of births per 1,000 women aged 15-19.



**Figure 1:** Global adolescent potency ratio (per 1,000 females aged 15-19 years old)<sup>10</sup>

Infants born to teenage moms are more prone to be premature and die as infants<sup>32</sup>. The offspring of teenage moms perform less fine on physical condition and societal measures than the babies of mature moms<sup>33</sup>. Adolescents younger than 16 admit fourfold the danger of maternal fatality than females aged their 20s, and the mortality level is around 50 percent greater<sup>3,34,35</sup>. Due to the twin burden of reproduction and growth, adolescent pregnancy represents a reproductively high-risk population<sup>36,37</sup>. And because of this, care should be taken to reduce the negative outcomes associated with adolescent mothers who are first-time mothers<sup>38,39</sup>. In less developed nations, pregnancy and delivery problems cause the mother and fetal mortality<sup>40,41</sup>. Consequently, it would be reasonable to do a comparative study focusing on the impact of medical conditions.

## Adolescent Pregnancy: Maternal-Neonatal outcomes



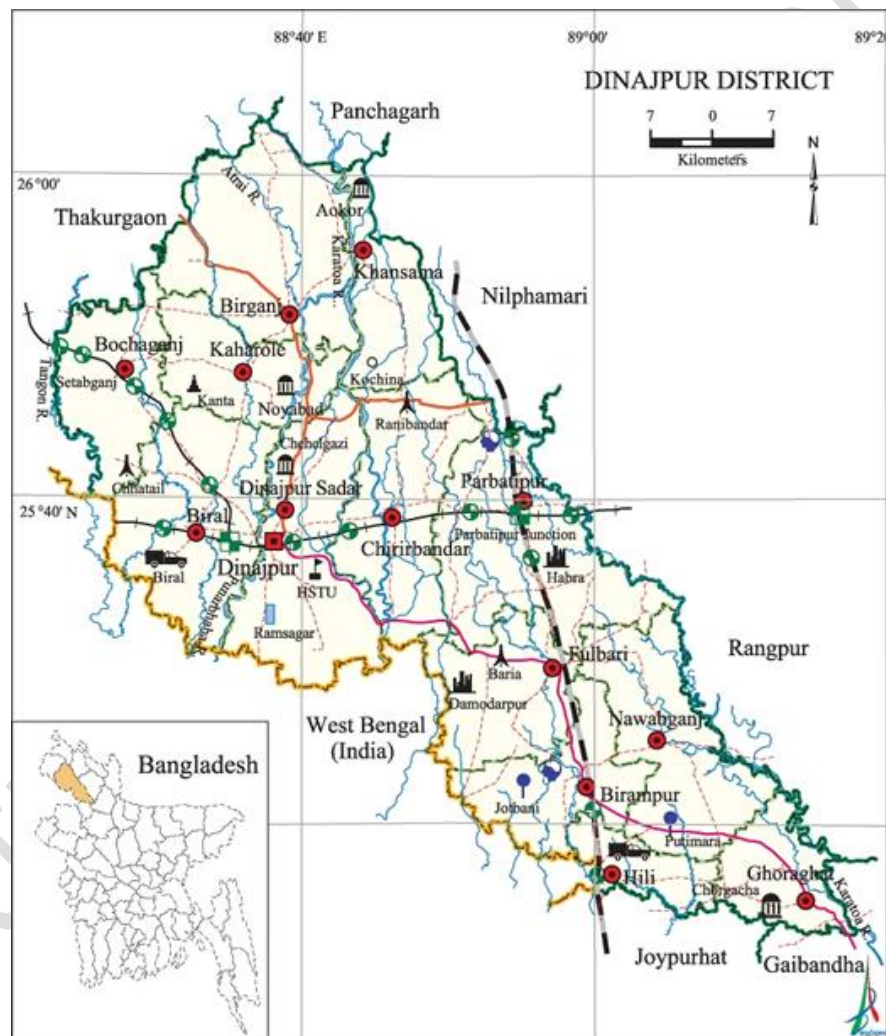
**Figure 2:** Unfavorable maternal and neonatal consequences of adolescent pregnancy<sup>14</sup>

Pregnancy-related complications are now the leading cause of death for young women in developing countries (30% and 50% of births occur before age 20 years old)<sup>42</sup>. Teenage pregnancy is most common in Bangladesh (35%), followed by Nepal (21%) and India (21%)<sup>43-45</sup>. In Bangladesh, 60% of brides are under 18, with 22% of those marriages occurring before the brides' 15th birthday<sup>46,47</sup>. In Bangladesh, one-third of adolescent girls aged 15 to 19 are mothers or pregnant due to early marriage<sup>48-50</sup>. Adolescent moms are more prone than adult moms to die from problems connected to pregnancy and childbirth<sup>21</sup>. As a result, the country's maternal and infant mortality rates are rising<sup>48,50</sup>. Although adolescents comprise a significant fraction of the population in underdeveloped nations, relatively little is known about their sexual knowledge and experience and the risk of adolescent pregnancy<sup>51,52</sup>. Therefore, the present study aims to compare the characteristics and outcomes of pregnancy and delivery among adolescent women to those of young adults, focusing on the role of medical variables.

## Materials and Methods

### Study Design and Sample Size

This is hospital-based cross-sectional research performed in the Department of Obstetrics and Gynecology at the M. Abdur Rahim Medical College Hospital in Dinajpur, Bangladesh. The duration of observation during the trial was six months (from June 2018 to November 2018). Figure 3 depicts the location of the study area in Bangladesh.



**Figure 3:** Map of the study area

Following Equation (1) was employed to determine the sample size:

$$n = \frac{z^2 pq}{d^2} \quad (1)$$

Here,

n = preferred sample bulk

z = Standard normal deviation, typically put as 1.96

p = 0.60

q = 1 – p = 1 - 0.60 = 0.40

d = level of precision, deemed as 0.05

It was calculated using this formula that a total of 384 people would constitute the desired sample size. As the current study duration was six months, this examination's inclusion and exclusion criteria targeted 100 patients. The study population includes all pregnant patients admitted to the Obstetrics and Gynecology department of M. Abdur Rahim Medical College Hospital, Dinajpur, for delivery. The population was separated into two groups. Group A includes patients between 14 and 19 primigravida (first-time mothers) with singleton pregnancies. Group B includes patients between 20 and 29 primigravida with a singleton pregnancy. Patients above 29, those with numerous pregnancies, and those with a history of cardiac, renal, hepatic, or epilepsy were excluded from this study. "A history of cardiac, renal, hepatic" refers to conditions where acute or chronic dysfunction of the heart, the kidneys, or the liver leads to dysfunction of the other.

### Data Collection and Analysis

Purposive sampling was employed to perform this research. The study examined the independent variables of age, socioeconomic status, gestational age, clinical presentation, occupational history, and per-vaginal examination. However, "per vaginal examination" was included in the study to investigate the gynecological health that often is part of a routine physical exam to find possible signs of ovarian cysts, sexually transmitted infections, uterine fibroids, or early-stage cancer. Additionally, the dependent variables included pregnancy-induced hypertension (PIH), anemia, pre-eclampsia, delivery method, eclampsia, low birth weight infant, and stillbirth.

All pregnant patients delivering at the M. Abdur Rahim Medical College Hospital must provide a complete medical history. Using a semi-structured questionnaire, data were acquired through a primary survey. This is a cross-sectional study in which each patient's pertinent information was recorded on a specially designed questionnaire. It included age, socioeconomic level, gestational age at presentation, clinical features, and per vaginal examination. All participants in this study were hospitalized as inpatients in wards and emergency rooms. The patients in the study were evaluated using a comprehensive history, a comprehensive physical examination, and pertinent laboratory investigations. Before collecting data, proper authorization was obtained from the relevant authority. After describing the study's goal to the respondents and gaining their verbal

consent, according to the study's selection criteria, the researcher conducted a face-to-face interview to collect data by asking questions in their native language. From an ethical standpoint, the respondents were provided unequivocal assurance that the findings of the interview and any investigations would never be divulged to unauthorized parties.

The information was then entered into a computer database and processed by computer software. The Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows was utilized to conduct statistical analyses. Continuous variables' means were calculated. Frequencies and percentages were used to show the numerical data. Using Equation (2), the Chi-Square test with Yates correction was employed to examine the cross-tabulated categorical variables. In addition, the Student t-test was applied to continuous variables, as shown in Equation (3). Statistical significance was assumed at the 0.05 level or lower.

$$\chi^2_{Yates} = \sum_{i=1}^N \frac{(|O_i - E_i| - 0.5)^2}{E_i} \quad (2)$$

where  $O_i$  is the noted occurrence,  $E_i$  represents the anticipated incidence, and  $N$  is the number of individual cases.

$$t = \frac{m - \mu}{s/\sqrt{n}} \quad (3)$$

where  $t$  represents Student's t-test,  $m$  exemplifies mean,  $\mu$  denotes theoretical value,  $s$  indicates standard deviation, and  $n$  embodies the variable setting range.

### **Ethical Implications**

No data or information was collected without the patient attendant's explicit consent. Participation in the study was completely optional. Respondents were permitted to withdraw their involvement from the study at any moment or any stage. Each patient gave their informed consent in writing. Before obtaining consent, the aims and purpose of the research were told to them. Both confidentiality and anonymity were maintained. No patient was recognized in any report or through research participation.



## Results

Table 1 presents the socio-demographic features of the study patients. The outcome demonstrates that the mean age was  $18.5 \pm 0.7$  years in the adolescent (Aged 14-19 years) group and  $23.5 \pm 2.9$  years among adults. There was a statistically significant difference ( $p < 0.05$ ). Educational status and residential status are also statistically significant in both groups. The occupational and socioeconomic status were not statistically significant between Adolescent and Adult groups. However, the result on the type of residence was statistically significant.

**Table 1:** Socio-demographic variables of the survey patients (n=100)

Socio-demographic variables	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
<b>Age (years)</b>					
<20	39	100.0	0	0.0	0.001
$\geq 20$	0	0.0	61	100.0	
Mean $\pm$ SD	18.5	$\pm 0.7$	23.5	$\pm 2.9$	
Range (min-max)	16	-19	20	-29	
<b>Educational status</b>					
Primary	32	82.1	36	59.0	0.034
Secondary	7	17.9	21	34.4	
Higher Secondary	0	0.0	4	6.6	
<b>Occupational status</b>					
Housewife	38	97.4	59	96.7	0.241
Service holder	0	0.0	2	3.3	
Day laborer	1	2.6	0	0.0	
<b>Socio-economic status</b>					
Lower	9	23.1	9	14.8	0.146
Lower middle	28	71.8	39	63.9	
Upper middle	0	0.0	1	1.6	
Middle class	2	5.1	12	19.7	
<b>Residence</b>					
Rural	34	87.2	47	77.0	0.035
Urban slam	2	5.1	0	0.0	
Urban non slam	3	7.7	14	23.0	

Table 2 presents the menstrual history of the study patients. The outcome illustrates that the menstrual history (menarche in years, menstrual period in days, and menstrual cycle) were not statistically significant between the Adolescent and Adult group. Some research suggests marriage may influence a woman's menstrual cycle and increase some of the symptoms of menstruation. Therefore, “married for years” was included in the menstrual history of the study patients. Married for years was significantly greater for adults than adolescents ( $p < 0.05$ ).

**Table 2:** Menstrual history of the study patients (n=100)

Menstrual history	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
<b>Menarche (years)</b>					
10	15	38.5	27	44.3	0.933
11	11	28.2	17	27.9	
12	7	17.9	9	14.8	
13	6	15.4	8	13.1	
<b>Menstrual period (days)</b>					
3-4	00	0.0	01	1.6	0.095
3-5	16	41.0	41	67.2	
4-5	02	5.1	01	1.6	
5-6	01	2.6	01	1.6	
5-7	20	51.3	16	26.2	
7	00	0.0	01	1.6	
<b>Menstrual cycle</b>					
Regular	28	71.8	49	80.3	0.322
Irregular	11	28.2	12	19.7	
<b>Married for years</b>					
1	08	20.5	08	13.1	0.049
1.50	09	23.1	04	6.6	
2	21	53.8	46	75.4	
3	01	2.6	03	4.9	

Table 3 displays the medical presentation of the study patients. The results show that vaginal bleeding is significantly above average for adults than adolescents ( $p < 0.05$ ). However, pain in the abdomen, membrane rupture, maternal distress, headache, blurred vision, and convulsion were non-significant ( $p > 0.05$ ).

**Table 3:** Medical presentation of the study patients (n=100)

Clinical presentation	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
Per vaginal bleeding					
Present	07	17.9	23	37.7	0.035
Absent	32	82.1	38	62.3	
Pain in abdomen					
Present	22	56.4	38	62.3	0.557
Absent	17	43.6	23	37.7	
Rupture of membrane					
Present	16	41.0	19	31.1	0.312
Absent	23	59.0	42	68.9	
Maternal distress					
Present	18	46.2	25	41.0	0.610
Absent	21	53.8	36	59.0	
Headache					
Present	24	61.5	36	59.0	0.996
Absent	15	38.5	25	41.0	
Blurring of vision					
Present	20	51.3	29	47.5	0.715
Absent	19	48.7	32	52.5	
Convulsion					
Present	13	33.3	19	31.1	0.819
Absent	26	66.7	42	68.9	

Table 4 displays the results from the clinical examination of the study patients. Regarding anemic status, anemia was higher in the Adolescent group than in adults, which was not statistically significant. Oedema was not statistically significant in both groups.

**Table 4:** Clinical examination of the study patients (n=100)

Clinical examination	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
Anaemia	22	56.4	30	49.1	0.517
No anaemia	17	43.6	31	50.9	
Oedema					
Present	32	82.1	49	80.3	0.830
Absent	7	17.9	12	19.7	

Table 5 presents the results from per vaginal inspection of the study group. Regarding the vaginal examination of the study group, all parameters were not statistically significant.

**Table 5:** Per vaginal assessment of the survey patients (n=100)

Per vaginal examination	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
Consistency of cervix					
Firm	7	17.9	7	11.5	0.362
Soft	32	82.1	54	88.5	
Position of cervix					
Anterior	22	56.4	30	49.2	0.383
Posterior	14	35.9	29	47.5	
Middle	3	7.7	2	3.3	
Presentation					
Cephalic	35	89.7	51	83.6	0.388
Breech	4	10.3	10	16.4	
Membrane					
Intact	14	35.9	33	54.1	0.183
Rupture	21	53.8	28	45.9	
Liquor					
Stained	0	0.0	1	1.6	0.854
Clear	12	30.8	18	29.5	
Meconium stained	11	28.2	15	24.6	
undamaged	1	2.6	2	3.3	

Table 6 presents the method of childbirth of the study group. The result shows that 20 (51.3%) delivery was vaginal in the Adolescent age group, and 24 (39.3%) were in the adult age group. The Cesarean section was higher in the adult age group but not statistically significant.

**Table 6:** Method of childbirth of the study group (n=100)

Mode of delivery	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
Vaginal delivery	20	51.3	24	39.3	0.240
Cesarean section	19	48.7	37	60.7	

Table 7 presents the fetal outcome. The result shows 29 (74.4%) low birth weight in Adolescents and 41 (67.2%) adults. This did not constitute a statistically significant change. Furthermore, 3 (7.7%) stillbirth was found in adolescents and 9 (14.8%) in adults. This did not constitute a statistically significant change. In addition, 7 neonatal death (17.9%) was found in adolescents and 11 (18.0%) in adults. This did not constitute a statistically significant change too.

**Table 7:** Fetal outcome (n=100)

Fetal outcome	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
Low birth weight	29	74.4	41	67.2	0.446
Stillbirth	3	7.7	9	14.8	0.231
Neonatal death	7	17.9	11	18.0	0.991

Table 8 presents the percentage of Hemoglobin (Hb%) on the delivery day and 3<sup>rd</sup> postnatal day of normal vaginal delivery or cesarean section. This study found that Hb% between both groups on the delivery day and the 3<sup>rd</sup> postnatal day of normal vaginal delivery or cesarean section were not statistically significant.

**Table 8:** Hb% on the delivery day and 3<sup>rd</sup> postnatal day of normal vaginal delivery or cesarean section (n=100)

	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
Hb% on the day of normal vaginal delivery/ cesarean section					
<7.5 (Controlled)	8	20.5	15	24.6	0.636
≥7.5 (Uncontrolled)	31	79.5	46	75.4	
Hb% on 3 <sup>rd</sup> postnatal day of normal vaginal delivery/ cesarean section					
<7.5 (Controlled)	0	0.0	0	0.0	-
≥7.5 (Uncontrolled)	39	100	61	100	

Table 9 presents the duration of hospital stay of the study patients. The result shows the mean duration of hospital stay 4.54±1.69 days in the Adolescent age group and 4.05±1.53 days were in the adults. This did not constitute a statistically significant change

**Table 9:** Duration of hospital stay of the study patients (n=100)

Duration of hospital stay (day)	Adolescent (n=39)		Adult (n=61)		P value
	n	%	n	%	
1	0	0.0	1	1.6	0.137
3	20	51.3	36	59.0	
5	10	25.6	15	24.6	
7	9	23.1	9	14.8	
Mean ± SD	4.54±1.69		4.05±1.53		

## Discussion

Our research intends to describe the characteristics and consequences of pregnancy and delivery among adolescent women (14-19 years) with those of young adults (20-29 years) by focusing on the influence of medical factors. For delivery purposes, the study population comprises 100 pregnant patients at the M. Abdur Rahim Medical College Hospital, Dinajpur, Bangladesh. The present study demonstrated that the mean age was  $18.5 \pm 0.7$  years in the adolescent group and  $23.5 \pm 2.9$  years in the adults. This did not constitute a statistically significant change. The outcome is in harmony with Saxena et al.<sup>53</sup>; Tanveer and Fatima<sup>54</sup>; Abbas et al.<sup>55</sup>; Kamini and Avvaru<sup>56</sup>, who performed a comparative study in different medical college hospitals, respectively (Vardhaman Mahavir Medical College and Safdarjung Hospital; Jinnah Hospital, Lahore; Liaquat University Hospital, Hyderabad; Tertiary Care Hospital, Visakhapatnam, Andra Pradesh).

Furthermore, both groups' educational and residential statuses were statistically significant. The findings are aligned with Chander and Lakshmi<sup>57</sup>, who performed a likely control evaluation of Obstetric behavior and consequences of teenaged pregnancies over four months. However, the current analysis observed that socioeconomic status was not statistically significant between adolescent and adult groups, which contradicts the result of Chander and Lakshmi<sup>57</sup>. Moreover, the current study shows that menstrual history (menarche in years, menstrual period, and menstrual cycle) was not statistically significant between the Adolescent and Adult groups, similar to the result of Chander and Lakshmi<sup>57</sup>. The present study shows that membrane rupture is higher in adolescents (41%) than in adults (31.1%), which is not statistically significant. Our study result is backed by Charpota et al.<sup>58</sup>, who also testified that prelabour rupture of the membrane is higher in adolescents.

Furthermore, the present study found that Eclampsia is higher in adolescents (33.3%) than adults (31.1%), which is identical to the result of Chander and Lakshmi<sup>57</sup>, who stated the results for adolescents and adults 6.4% and 1.8%, respectively. In addition, the current study shows that Anaemia was higher in adolescents than adults, although the result was insignificant. The result is supported by Tripathi and Sherchan<sup>7</sup>; Eldene et al.<sup>59</sup>; and Kamini and Avvaru<sup>56</sup>, who performed a study at Gandaki Medical College Hospital, Pokhara; Assiut University Hospital, Assiut, Egypt; and Tertiary Care Hospital, Visakhapatnam, Andra Pradesh respectively. The present study revealed 20 (51.3%) vaginal delivery in adolescents and 24 (39.3%) adults. Cesarean section was higher in the adult age group but not statistically significant. Our findings are consistent with Kayastha and Pradhan<sup>43</sup>, who reported normal delivery in the test and control were 82.9% and 81.1%. In comparison, the ratio of cesarean delivery was analogous at 10.2% and 10.7% in both groups. Furthermore, Eldene et al.<sup>59</sup> found that older pregnancies had an elevated occurrence of cesarean section. In the study by Eldene et al.<sup>59</sup>, 58% of the patients were delivered vaginally in the adolescent group, while 24% were delivered by cesarean segment. Another study by Tripathi and Sherchan<sup>7</sup> found that 74% of the patients in the non-teenage group were delivered vaginally and 14% of births were facilitated through cesarean section.

According to Chander and Lakshmi<sup>57</sup>, the incidence of lower segment cesarean section (LSCS) is fewer in teenage when put side by side with adults. Tanveer and Fatima<sup>54</sup> reported that adolescent mothers are at two times higher risk of cesarean section rate than adults. Abbas et al.<sup>60</sup> found that a greater percentage of teenage mothers gave birth normally. There was a statistically significant increase in the use of elective cesarean sections and surgical vaginal births among the adult moms who reported having them<sup>60</sup>. A study by Kamini and Avvaru<sup>56</sup> reported that Sixty-six percent of young and 58 percent of mature moms had healthy vaginal births. Cesarean sections were more common among moms aged 20 and above (38%) than among teens (15%)<sup>56</sup>.

The current study reported 29 (74.4%) low birth weights in adolescents and 41 (67.2%) for adults. This did not constitute a statistically significant change. In addition, 3 (7.7%) stillbirth was found in adolescents and 9 (14.8%) in adults. This did not constitute a statistically significant change. Moreover, 7 (17.9%) neonatal death was found in adolescents and 11 (18%) in adults. This did not constitute a statistically significant change. Other previous studies support these results. A study by Nasreen et al.<sup>61</sup> found that stillbirth was more in adolescent mothers (20.90%) compared to adults (10.0%). Nasreen et al.<sup>61</sup> also reported extra low birth weight infants in adolescents (38.2%) than adults (16.4%). This meant that adolescent mothers had a 3.157 higher risk of having a baby with a low birth weight<sup>61</sup>.

Furthermore, Tripathi and Sherchan<sup>7</sup> found the incidence of low birth weight in teenage primigravida (24%) more compared with non-teenage (9%). Adolescent mothers are at higher risk of low birth weight (20.4%) compared to adult primigravida (8%), according to a study by Tanveer and Fatima<sup>54</sup>. Regarding neonatal outcomes in both study groups by Abbas et al.<sup>60</sup>, teenage moms had notably lesser birth weight newborns. However, stillbirths were more common in adult mothers<sup>60</sup>. Moreover, Kamini and Avvaru<sup>56</sup> found that teenagers have a higher prevalence of low birth weight (25%) than adults (18%). There was no statistically significant variation in results. The present study found the duration of hospital stays  $4.54 \pm 1.69$  days for the adolescent age group and  $4.05 \pm 1.53$  days for the adult age group. Our assumptions are backed by Eldene et al.<sup>59</sup>, who revealed that older group pregnancies had a higher incidence of longer hospital stays.

## Conclusion

This research examines the differences between teenage and adult pregnancy regarding the likelihood of negative obstetric outcomes in a tertiary hospital in Dinajpur, Bangladesh. Using a semi-structured questionnaire, data were acquired through a primary survey. Teenage pregnant women have a significantly lower rate of literacy than adults, according to the findings. It was statistically significant that adolescents are more likely to reside in rural areas than adults. This study revealed that lower socioeconomic groups have greater rates of adolescent pregnancy. However, the finding was not statistically significant. The incidence of eclampsia in adolescents and adults was 33.3% and 31.1%, respectively. However, the results were not statistically significant. The incidence of newborns with low birth weight was higher among adolescents (74.4%) than adults (67.2%), although the difference was not statistically significant.

Furthermore, the results indicate that pregnant adolescents are at a higher risk for anemia, convulsions, and low birth weight. Additionally, they are more likely than older primigravida to give delivery vaginally, but this difference is not statistically significant. This research concluded that increasing the age of marriage and childbirth and providing adequate prenatal care for girls could improve their health and nutrition while reducing the health risks to their newborns.

The present research recommends proper antenatal care for initial exposure and proper management of complications. Additionally, preventing adolescent pregnancies requires public awareness campaigns and health education. Although the present research provides significant findings in the case of Bangladesh, the study has some limitations which could be adopted in future studies. Subjects were drawn from a single hospital in the research area. Therefore, it is possible that the study's findings might not accurately portray the country. The present study also had a small sample size and was done briefly. More studies, including many patients in this field, are needed to formulate. Future studies could consider a huge sample size by employing new methods to conduct this kind of research.

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