International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2023; 7(5): 97-103
Received: 16-07-2023
Accepted: 22-08-2023

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Maternal and Perinatal Outcome of Adolescent Pregnancy

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DOI: https://doi.org/10.33545/gynae.2023.v7.i5b.1383

Abstract
Background: Teenage pregnancy is a worldwide problem bearing serious social and medical implications relating to maternal and child health. Adolescent pregnancy, a social problem distributed worldwide, has serious implications on maternal and child health, especially in the context of developing countries. In Bangladesh, teenage pregnancy is an important public-health problem.
Objective: To determine the maternal and perinatal outcome of Adolescent pregnancy admitted in Institute of Child and Mother Health (ICMH).
Methods: The Cross sectional study was carried out in the Department of Department of obstetrics and gynecology; Institute of child & mother health (ICMH) Matuail, Dhaka, a tertiary level hospital of Bangladesh from 1st January 2014 - 30th June 2014. 120 patients presented with adolescent pregnancy (Primi or multigravida without medical complications) diagnosed on clinical, biochemical, investigational background were enrolled in the study, fulfilling the inclusion and exclusion criteria.
Methods: Adolescent pregnancy cases were enrolled in the study after getting informed written consent from themselves or attendant.
Results: Results revealed that the maximum number of teenage patients 54(45%) were 18 years of age group, next 37 (31%) were between the age group of 19 years. The present study showed that 43(36%) teenage mothers came from rural, 68(57%) from urban slum and 9(7%) from urban non slum areas. Most of the teenage mothers were housewives 97 (80.33%), then worker 11(9.16%). The increase risk of adverse pregnancy outcome associated with low maternal age has been attributed to poor socioeconomic conditions among teenagers. Low levels of literacy adversely affect reproductive and sexual health awareness and, thus, quality of life. The current study showed that Illiterate had 38(31.66%) and can sign only 13(10.83%). This study showed that only 8(6.66%) teenage mothers use contraceptive regularly and 74(61.66%) never use contraceptives and study showed that planned pregnancy is only 20%, majority of teenage pregnancy had come without their desire. Main causes of which are ignorance about contraceptives. Study demonstrated that only 11(9.16%) of teenage mothers have regular antenatal checkup, and 65(54.16%) irregularly, 44(37%) had got no ANC. The current study showed that Caesarean section was 38(31.66%) and normal vaginal delivery 82(68.33%). Most common overall indication for caesarean section was foetal distress (about 36.84%). Maximum number of babies 68(56.66%) were low birth weight, had birth weight between 2-2.5 kg. Then 34 (28.33%) were less than 2 kg and only 18 (15%) of babies birth weight were >2.5 kg. Study showed 19(15.83%) of the babies developed birth asphyxia, 11(9.16%) had prematurity, 7(5.83%) jaundice. We observed low birth weight is a key predictor for fetal complication and child mortality. It may be due to babies born to adolescent mothers are likely to be premature, and hence, the incidence of low birth weight is higher in them.
Conclusion: Bangladesh is a developing country and her health budget is minimum. Strokes are causing a great burden for the family, society, community as well as the nation. So, we should think about known modifiable risk factors of stroke, proper control of which plays an important role in the primary prevention of the disease. Ongoing studies may help to clarify lipid related risk factors in ischaemic stroke. In the interim, this study provides data that can inform public health strategies directed at assessing and reducing stroke severity and stroke events.

Keywords: Maternal, Perinatal Outcome, Adolescent Pregnancy.

Introduction
Adolescent pregnancy, a social problem distributed worldwide, has serious implications on maternal and child health, especially in the context of developing countries In Bangladesh, teenage pregnancy is an important public-health problem, although the national policy of the Government advocates the minimum legal age of marriage for girls to be 18 years [1, 2].

Marriage is the leading social and demographic indicator of the exposure of women to the risk of pregnancy. Marriage in Bangladesh marks the point in a woman's life when childbearing becomes socially acceptable. Age at marriage has a major effect on childbearing because the risk of pregnancy depends primarily on the age at which the woman marries. Among women who are current age 15-19, 17.2 percent married by age 15, and 74 percent married by age 18. Men in Bangladesh tend to marry later in life than women.[2] When a woman becomes pregnant she is at risk of the life threatening complication which may arise at any time. However, there are certain groups of pregnancies, where the mother, the foetus or the neonate are in a state of jeopardy [3]. In Bangladesh, three women die every hour due to complications related to pregnancy and childbirth. The combination of poor nutrition and early child bearing expose young women to serious health-risks during pregnancy and childbirth, including damage to the reproductive tract, pregnancy- related complications, such as anaemia, pregnancy-induced hypertension, preterm labour, cephalopelvic disproportion, maternal mortality, perinatal and neonatal mortality, and lov birthweight [4, 5]. Teenage is the modern description of adolescent. Adolescence is the period of life during which the carefree child becomes the responsible adult [6]. Adolescents as defined by world Health Organization is the period of life between 10-19 years [7]. It is the time of development involving changes in physical, mental, emotional, spiritual and social functioning. In case of perinatal mortality about 7.5 million perinatal deaths occur annually in the world, most of these in the developing countries. Within Asia, South Asia perinatal mortality rate is 87 per 1000 per births [8]. Bangladesh in having very high perinatal mortality rate in nineteen decades i.e. 75 per 1000 births [9]. Although this situation is gradually improved in last twenty years, perinatal mortality rate in Bangladesh is now 50 deaths per 1,000 pregnancies [2], which is 9 percent lower than the level observed in the 2007 BDHS (55 deaths per 1,000 pregnancies). Perinatal mortality is high among teenage mothers and mothers age 40-49 and it is highest among first pregnancies (71 deaths per 1,000 pregnancies). Rural areas have higher perinatal mortality than urban areas [2]. Many pregnant adolescent come from low socio economic backgrounds, having poor education and perhaps poor general health due to inadequate nutrition, cigarette smoking, drug abuse and STDs [10]. Pre-eclampsia, eclampsia, which is more common in a first pregnancy, occurs more frequently among adolescents than among adult women. Pregnancy occurs more frequently among adolescents than among adult women. Prematurity and small for date infants are major problems in adolescent pregnancies [10]. The adolescent mother is more likely to develop anaemia, eclampsia & obstructed labor as reported from Nigeria & Bangladesh. The highest MMR of 38 per 1000 was seen in girls of 15 years & younger compared to 5.8 in the 21-24 years age group [11]. In Bangladesh the MMR in the 15-19 years age group was almost twice the rate seen in 20-34 years [11]. Most studies in home & abroad have used record-based data. There is a lack of recent data on the perinatal outcomes of teenage pregnancy under the changing scenario of socioeconomic development and availability of better healthcare facilities. The objective of the present study was to assess and evaluate the sociodemographic characteristics, maternal and perinatal outcomes of teenage mothers attending a tertiary-care hospital for their deliveries. To attain the successful "Safe Mother Hood" adolescent pregnancy stands for a burning issue and needs proper attention and evaluation for the prevention of its devastating effect.

Materials and Methods

Study design: This was cross sectional study.

Place of study: Obstetrics & Gynae Department, Institute of child & mother health (ICMH) Matuail, Dhaka, Bangladesh.

Study periods: Six months (1st January 2014 – 30th June 2014).

Sampling: This was a Purposive type sampling.

Sample size: A total of 120 Adolescent (Age 15 to 19 yrs.) pregnant cases.

Research materials: All the data were recorded in a preformed structured questionnaire.

Main outcome variables: Patients who were admitted in the Department of Obstetrics & Gynae, Institute of child & mother health (ICMH) Matuail, Dhaka either through emergency or out-patient department, with an adolescent pregnancy were included in this study. An interview based questionnaire was used to collect information from the patients or his/her relatives, regarding age, socio-demographic characteristics, educational level, clinical presentation, risk factors, complications during ante natal period, delivery outcome and perinatal outcome etc. after taking an informed written consent. Thereafter thorough clinical examination was performed and some laboratory investigations were sent. This questionnaire was used for collection of information by interviewing adolescents. The data were analyzed by statistical (SPSS) method and presented in the form of tables, figures, graphs, diagrams & charts etc.

Inclusion Criteria

- Age-15 to 10 years.
- Primi or multigravida without medical complications
- Gestational age-viable age to term.

Exclusion Criteria

- Age more than 20 years.
- Associated with medical complications

Data analysis

Detailed procedure: Detailed history, physical examination, with others systemic examination and essential investigations were done in every adolescent. All adolescent were kept under close supervision. When any untoward events developed it was managed and recorded properly. Data were collected on pre-designed schedule "Case Record Form" and recorded in tabulated form and analyzed by statistical method.

Data collection

Data was collected using a structured questionnaire (research instrument) containing all the variables of interest. The questionnaire was finalized following pretesting. Collected data was checked daily and edited (if needed).

Statistical analysis

After collection, data was checked & analysis was done by Statistical package for social science (SPSS). Result of clinical study with statistical analysis was presented by tables, figures, graphs, diagrams and charts etc. All these had their own legends (i.e. title) and are serially numbered.

Results

Table 1: Demographic characteristics of the patients (n=120)

Age (years)	Number of patients	Percentage (%)
19 years	37	30.83
18 years	54	45
17 years	23	19.16
16 years	2	1.66
15 years	4	3.33
Habitancy		
Rural	43	36
Urban slum	68	57
Urban non slum	9	7
Occupation		
House wife	97	80.33
Service holder	2	1.66
Garments Worker	11	9.16
School teacher	1	0.83
Day labour	3	2.5
Maid servants	6	5
Education		
Primary	68	56.66
Secondary	0	0
Higher secondary	1	0.83
Can sign only	13	10.83
Illiterate	38	31.66
Educational status of adolescent girls husbands		
Primary	42	35
Secondary	13	10.83
Higher secondary	11	9.16
Graduate	5	4.16
Can sign only	11	9.16
Illiterate	41	34.16
Socioeconomic status		
Poor class	53	44
Middle class	46	39
Upper class	21	17
Causes and factors for early marriage Education		
Family tradition	28	23.33
Religious sentiment	16	13.33
Economic factors	47	39.16
Social factors	23	19.16
Unknown	6	5

A total number of 1742 obstetric patients were admitted during study period in Obstetrics and Gynecology department of ICMH. Among them 310 (17.79%) patients were adolescent pregnancy, from them 120 patients were selected for the study, which fulfill the inclusion criteria. In this series, the maximum number of teenage patients 54(45%) were 18 years of age group, next 37 (31%) were the age group of 19 years. 43(36%) teenage mothers come from rural, 68 (57%) from urban slum and 9(7%) from urban non slum areas. Majority of the teenage mothers comprised of housewives 97(80.33%), then worker 11(9.16%), maid servants 6(5%) and day labour 3(2.5%). Maximum numbers of patients were in primary level of education 68(56.66%). Illiterate had 38(31.66%) and can sign only 13(10.83%). Majority numbers of adolescents husbands had primary education 42(35%), followed by illiterate 41(34.16%), secondary education 13(10.83%). Socioeconomically patients are grouped into three classes. Poor class GNI per capital income (In Tk.): <7000, Middle class GNI per capital income (In Tk.): 7000- 27000 and Upper class GNI per capital income (InTk.) : >27000. Among the adolescents the poor class 53(44%) comprising the major percentage of the study population, which is followed by middle class 46(38%) and remaining were upper class 21(17.5%). Several factors play foe early marriage and early pregnancy. Among 120 teenage pregnant cases, maximum numbers of patients had economical 47(39.16%) for early marriage, then family tradition 28(23.33%). Only 8(6.66%) teenage mothers use contraceptive regularly. Majority of the cases 74(61.66%) were non user. In this series, the maximum number of patients 96 (80%) pregnancy status had unplanned and incidental, and only 24(20%) cases planned pregnancy (table-1).

Table 2: Antenatal Checkup, Gestational age and Obstetrics history of teenage and adolescent mothers (n=120)

ANC	N	%	Gestational age	N	%	Obstetrics history	N	%
Regular	11	9.16	< 28 weeks	2	1.66	Prime Gravid	89	74.16
Irregular	65	54.16	28-37 weeks	21	17.5	Multi Gravid	31	25.84
No check up	44	36.66	37-42 weeks	94	78.33	-	-	-
-	-	-	> 42 weeks	3	2.5	-	-	-

The table-2 shows that only 11(9.16%) of teenage mothers had regular antenatal checkup, and 65(54.16%) irregular, 44(37%) had got no ANC. The table shows 94(78.33%) of teenage mothers got themselves admitted in the hospital at gestational age between 37-42 weeks followed by 17.5% at 28-37 weeks. In this series, the maximum number of patients 89 (74.16%) was primigravida and multi gravid were 31(25.84%).

Table 3: Antepartum complications, Outcome of labour and intra-partum complications and mode of delivery (n=120)

Antepartum complication	Number of patients	Percentage (%)
Anemia	48	40
Pre Eclampsia	3	2.5
Eclampsia	11	9.16
Malpresentation	2	1.66
IUD	1	0.83
IUGA	6	5
No complications	49	40.83
Intra-partum complication		
Obstructed labour	6	5
Prolonged labour	9	7.5
PROM	5	4.16
Uterine Atony	11	9.16
Preterm delivery	8	6.66
Mode of delivery		
Normal vaginal delivery	82	68.33
LUCS	38	31.66

In this series, the maximum number of patients 48 (40%) suffered from anemia, 11(9.16%) developed eclampsia and 6 (5%) developed IUGR. 39(32.5%) teenage mother developed no complication. The table shows that 9(7.5%) of teenage mothers developed prolonged labour, 8(6.66%) had preterm delivery and 6(5%) had obstructed labour. Among the adolescent pregnant cases majority of the adolescent delivered normal vaginal delivery 82(68.33%), LUCS have 38(31.66%). No vacuum or forcep has done (table-3).

Table 4: Indications for LUCS, Post-partum complication and Perinatal outcome (n=120)

Indications	Number of patients	Percentage (%)
CPD	5	13.15
Malpresentation	2	5.26
Eclampsia	9	23.68
Pre-Eclampsia	0	0
Obstructed labour	5	13.15
Prolonged labour	3	7.89
Fetal distress	14	36.84
Post-partum complication		
PPH	6	5
Puerperal sepsis	3	2.5
PPE	5	4.16
Token feed	3	2.5
Partial breast feeding	8	6.66
UTI	5	4.16
Wound infection	4	3.33
Perinatal outcome		
Live birth	112	93.33
Take home alive	107	89.16
Early neonatal death	5	4.16
Still birth	8	6.66

The most common overall indication for caesarean section was foetal distress (about 36.84%), followed by Eclampsia (23.68%). The table shows that 6(5%) of teenage mothers suffered from PPH, 5(4.16%) had PPE, 4(3.33%) had wound infection and 8(6.66%) had partial breast feeding. The table shows that 112(93.33%) babies were born alive, among them 107(89.16%) take home alive and 5(4.16%) were early neonatal death. There also 8(6.66%) were stillbirth (table-4).

Table 5: Weight of the baby, Apgar score and fatal complication and morbidities (n=120)

Birth weight	Number of patients	Percentage (%)
<2 kg	34	28.33
2-2.5 kg	68	56.66
>2.5 kg	18	15
APGAR Score	**At first minute (Number of patients with percentage)**	**At five minute (Number of patients with percentage)**
7-10	83 (69.16)	92 (76.66)
4-6	28 (23.33)	15 (12.5)
<4	9 (7.5)	13 (10.83)
Fetal morbidity		
Birth asphyxia	19	15.83
Prematurity	11	9.16
IUGR	6	5
Jaundice	7	5.83
Septicemia	3	2.5

The table-5 shows that maximum number of baby 68(56.66%) were low birth weight, had birth weight between 2-2.5 kg. 34(28.33%) were very low birth weight, had less than 2 kg body weight and only 18(15%) of baby birth weight >2.5 kg. The table shows Apgar score of the baby at first minute 83(69%) were between 7- 10 and 28 (23%) were between 4-6.Only 9(7.5%) was <4. The table shows most of the baby 92(76.66%) APGAR score at five minute were between 7-10 and 15(12.5%) were between 4-6.Only 13(10.83%) was <4. Among the cases 19(15.83%) of the babies developed birth asphyxia, 11(9.16%) had prematurity, 7(5.83%) had jaundice.

Discussion

Our study design raises a number of important methodological issues, including patient selection sample size, and the prospective identification of maternal, neonatal outcome, all of which may exert a powerful influence on the results. Bangladesh is a developing country with about 149.77 million populations. About 77.79 million of them are women and 15.4% belong to less than 20 years of age 54.3% women are between the ages of 15-49 years (REF cencus 2001 primary report) [12]. Most young women are the victim of malnutrition, lack of education, low social status and economically weak. The health and life of teenage girls are put at risk by pregnancy and childbirth, especially where living conditions are poor and health care facilities are inadequate. The present study teenage pregnancy is 17.79% among the total admitted patient in Obstetrics and Gynecology department of ICMH. In this series, the maximum number of teenage patients 54 (45%) were 18 years of age group, next 37 (31%) were between the age group of 19 years. There was no teenage mother aged less than 15 years. This findings correlates with the study of home and abroad. Study of Prianka Mukhopadhyay, R.N. Chaudhuri, and Bhaskar Paul "Hospital-based Perinatal Outcomes and Complications in Teenage Pregnancy in India [13]. Shows that maximum number of teenage mothers (age 13-19 years) belonged to the age-group of 18-19 years (approximately 89%). According to the study of Haider SJ. Saleh SN *et al.* [14] shows that mean age of first marriage is 15 years, and 27% of teenage girls are mothers. According to Susan S *et al.* [15] pregnancy of teen age patients was 32%. It is comparable to the present study. According to Ghosh N. Ghos B. in India (Bombay) in 1976, teenage

pregnancy estimated it to be high as 14.9% [16]. The present study shows that 43(36%) teenage mothers came from rural, 68 (57%) from urban slum and 9(7%) from urban non slum areas. Study also showed that 44% of the teenage mothers have come from low socioeconomic class, only 18% from upper class. Study revealed that economic instability plays important factor for early marriage in our society, about 47(39.16%) of cases found economical causes for early marriage, then family tradition 28 (23.33%). Most of the teenage mothers were housewives 97(8B0.33%), then worker 11 (9.16%). All these findings are comparable with others study, Study of Sarker *et al.* shows 51.3% of teenage mothers came from rural areas [17]. The increase risk of adverse pregnancy outcome associated with low maternal age had been attributed to poor socioeconomic conditions among teenagers Study of Yoder and Yong showed most of the teenage mothers were from a lower socioeconomic background [18]. It is similar to the present study as most of the teenage mothers were from low socioeconomic status. Low levels of literacy adversely affect reproductive and sexual health awareness and, thus, quality of life. An early start of childbearing greatly reduces the educational and employment opportunities of women and is associated with higher levels of fertility. The current study shows that Illiterate was 38(31.66%) and can sign only 13(10.83%), 68 (56.66%) had primary and no one had secondary and only 1(0.83%) had higher secondary education. Cooksey *et al.* have shown that increased maternal education leads to first intercourse at a later age and a higher likelihood of using contraceptives at first intercourse [19]. According to BANBEIS report, 65.5% Bangladeshi ore educated [20]. This study shows that only 8(6.66%) teenage mothers used contraceptive regularly and 74(61.66%) never used contraceptives. In the NHDSBD-2011 [1] report showed that 76% respondents currently used any one kind of family planning method (urban 76.6% and rural 75.6%) and most of them used modern methods of family planning. Taking pill was the most widely used method (45.9% in both urban and rural) followed by injection for female (15.6%), male condom (5%), and ligation (4.5%). vasectomy (1.3%) and IUD (1.1%) [1]. Use of male condom was higher in urban area compared to the rural area (8.4% versus 3.6%). According to BDHS-20112, Use of contraception among married women in Bangladesh had increased gradually from 8 percent in 1975 to 61 percent in 2011 [2]. Justin C *et al.* showed that 92% of early leenagers had never used any form of contraceptives [21]. Study of Prianka Mukhopadhyay, R.N. Chaudhuri, and Bhaskar Paul [13] showed that contraceptive- use was significantly higher among the adult mothers (18.9%) than among the teenage mothers (1.7%). Contraceptive use was much lower among the teenage population possibly because of their lower levels of education and family pressure for childbearing. The present study showed that planned pregnancy was only 20%; majority of teenage pregnancy was against their desire. Main causes of which are ignorance about contraceptives. The table shows that only 11(9.16%) of teenage mothers had regular antenatal checkup, and 65(54.16%) irregularly, 44(37%) had got no ANC. This indicates that the teenage mothers were less careful about their pregnancy probably because of the lack of awareness and maturity. Other authors had reported early registration of pregnancy ranging from 40% to 90% in teenagers; however, the frequency of antenatal check-ups by them was consistently lower [22-27]. According to BDHS report (2011) showed that 68 percent of women with a birth in the three years preceding the survey received antenatal care at least once from any provider. Most women (55 percent) received care from a medically trained provider. Comparable data from the 2004 and 2007 BDHS showed that while antenatal care from any provider was increased by 17 percent over the past few years (from 58 percent in 2004 to 68 percent in 2011), antenatal care from a medically trained provider during the same period was increased by 7 percent only (from 51 to 55 percent respectively) [28]. Study of Yodev states that teenage mothers used prenatal care less than the older mother [29]. Study of Sarker CS *et al.* showed that antenatal care was nil or inadequate in 48.6% cases [17]. Among the antepartum and intrapartum complication, current study showed maximum number of patients 48 (40%) were affected with anemia, then 11(9.16%) developed Eclampsia, 3(2.5%) developed pre-Eclampsia, 6(5%) developed IUGR, 9(7.5%) of teenage mothers developed prolonged labour, 8(6.66%) had preterm delivery and 6(5%) had obstructed labour. According to Osbourne GK *et al.* study showed that- 'anaemia was the only antenatal complication that was significantly increased [30]. Tuimala R *et al.* showed that 'anaemia was more often in teenage group [31]. Study of Porozhanova V *et al.* [32] so showed in adolescent group pre-eclampsia and eclampsia was 3.22%, the rate of premature delivery was higher, 17.99%. Study of Sarkar CS *et al.* showed eclampsia and pre-eclampsia affected teenage mothers (10.6%) were much more frequent than mother of 20 years of age and above (5.2%). Incidence of low birth weight was 30%, prematurity 21.1% and perinatal mortality were 16.4% recorded [17]. The present study matched with the above study. Another study by Prianka Mukhopadhyay, R.N. Chaudhuri, and Bhaskar Paul [30] showed that post-term pregnancies were (2%) in teenage mother, stillbirth rate was also significantly higher in teenage deliveries (5.1%) than adult. The teenage mothers developed more adverse perinatal complications, such as preterm births, stillbirths, neonatal deaths, and delivered low-birthweight babies, when compared with those of the adult primigravida mothers. Teenage pregnancy is still a rampant and important public-health problem in Bangladesh with unfavourable perinatal outcomes and needs to be tackled on a priority basis. The current study shows that Caesarean section was 38(31.66%) and normal vaginal delivery 82(68.33%). Among teenage mother vaginal delivery was more and caesarean section was lower, this could be due to a higher proportion of smaller babies in that age-group. Our study also showed most common overall indication for caesarean section was foetal distress (about 36.84%), followed by eclampsia (23.68%) and 5(13.15%) for CPD and obstructed labour. This result correlated with study of Prianka Mukhopadhyay, R.N. Chaudhuri, and Bhaskar Paul "Hospital- based Perinatal Outcomes and Complications in Teenage Pregnancy in India [13]. That teenage mothers had a higher proportion (65.7%) of normal vaginal delivery compared to the older mothers (61.4%). Foetal distress and pre-eclampsia were more commonly indication of C/S found among the teenage mothers [13]. But BDHS- 2011 report showed 17 percent of births were delivered by caesarean section [2], which implies that three in five births in a facility are delivered by c-section. Opinion on modes of delivery by operative intervention in teenage pregnancy differed widely some authors reported a higher rate of instrumental deliveries in the case c teenage pregnancies [33, 34, 35]. The possible explanation could be underdevelopment =pelvis in younger mothers and occurrence of cephalopelvic disproportion mon frequently in teenage mothers, consequently, the number of instrumental deliverie and caesarean sections were also higher. Other authors reported lower rates, a some contradicted this view [36, 37, 38]. The present study showed that maximum number of baby 68156 087%) were low birth weight, had birth weight between 2-2.5 kg. Then 34(28

33%) were very low birth weight, had less than 2 kg body weight and only 18(15%) of baby birth weight >2.5 kg. The higher frequency of occurrence of low-birth weight babies in the teenage group was the most common reason in fetal complication and morbidities. The teenage mothers had a significantly higher number of preterm deliveries compared to the adult mothers while the reverse was noted in post-term deliveries such a high incidence of preterm labour leads to higher risks for neonates. Many authors from developed countries have reported an association between teenage pregnancy and preterm delivery [39-43]. According to Lao TT *et al.* the incidence of low birth weight was higher in teenage mothers (13.6 vs 6.5% $p<0.001$). In study of Ali *et al.* 'adolescent pregnancy was found to be associated with significantly higher rate of premature and low birth weight infants [44]. Du Plessis *et al.* in their study on adolescent pregnancy found, women of young maternal age are approximately 2.5 times more likely to have a low birth weight infants [45]. Results of Pranks Mukhopadhyay *et al.* revealed that the teenage mothers had a higher proportion (27.7%) of preterm deliveries compared to 13.1% in the adult mothers and had low-birth-weight babies (38.9% vs 30.4% respectively) [13]. In this current study 19(15.83%) of the babies developed birth asphyxia, 11(9.10%) had prematurity, 7(5.83%) developed jaundice. Low birth weight is a key predictor of malnutrition and an important determinant of child mortality [45]. One of the most detrimental outcomes of low birth weight is growth retardation, and if the newborn happens to be a girl, it perpetuates a vicious cycle of female malnutrition throughout adolescence and adulthood. This process gives rise to a condition of Intergenerational transmission of physical (small mothers have small babies), social and economic disadvantages into the next generation [46,47]. The present study found that the number of low-birth weight babies, very low birth weight babies were more in teenage mothers (68+34). Babies born to teenage mothers are likely to be premature, and hence, the incidence of low birth weight is higher in them. This observation corroborates the findings of several other authors [48, 49, 50].

Conclusions

The findings of the study suggest that adolescent childbearing and motherhood are common and still deeply embedded among Bangladeshi women. The findings indicated that women's education, social status, economic stability etc has significant depressive influence on the probability of adolescent childbearing. It was found from this study that the teenage mothers were from a socioeconomically- disadvantaged background with lower levels of education and used lesser antenatal healthcare services. They developed more perinatal complications, such as preterm births, stillbirths, and neonatal deaths, and delivered babies with low-birth weight. Early marriage is directly associated with early childbearing. Higher incidents of maternal mortality, morbidity and perinatal complication in Bangladeshi are result from higher prevalence of teenage motherhood. Childhood place of residence and religion are also two important determinants in adolescent motherhood, perinatal complication.

Recommendations

Efforts need to be directed towards strict enforcement of laws prohibiting teenage marriage in Bangladesh with developing countries. Access to quality health services that are gender-sensitive and adolescent-friendly should be ensured. For pregnant adolescents attending the antenatal clinic, counseling, extra care should be taken to ensure that the minimum number of regular antenatal visits is made. Appropriate and adequate counseling on different antenatal services are to be offered to them. Tetanus toxoid immunization and consumption of the recommended dose of iron and folic acid should be checked, and intake of an additional meal should be advised at every visit. In addition, they should be advised to take more rest and have adequate sleep to avoid premature births. Early detection of complications, such as anaemia, pre- eclampsia, and intrauterine growth restriction and their management, and good intranatal and postnatal care are essential Contraceptive practices need to be promoted among married adolescents so that future pregnancy could be delayed till they reach maturity. Steps should be taken to educate adolescent mothers about the health hazards of too early and repeated successive pregnancies. Teenage pregnancy needs to be tackled as a priority to ease the burden of socioeconomic and helth problem.

Limitation

1. The primary limitation of the study was that, since it was conducted in a tertiary-care hospital set-up, chances of high-risk cases may be more, and it may not truly reflect the prevailing situation in a community setting.
2. Others limitation were short duration of study and limited investigation facility.
3. Family income, which can be an important determinant in pregnancy outcomes, could not be clarified under sociodemographic characteristics, as income could not be verified.
4. Another limitation of the study was that the findings of adverse perinatal outcomes of teenage pregnancy could have been confounded by the unequal distribution of different sociodemographic characteristics in the case-control. Further studies are needed to quantify the adverse outcomes after adjusting for the different confounding factors.

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How to Cite This Article
Shammi TK, Sultana M**,** Nancy FA, Sikder M. Maternal and perinatal outcome of adolescent pregnancy. International Journal of Clinical Obstetrics and Gynaecology. 2023;7(5):97-103.