

International Journal of Contraception, Gynaecology and Obstetrics

ISSN Print: 2664-9861
ISSN Online: 2664-987X
Impact Factor: RJIF 5.42
IJCGO 2023; 5(1): 34-38
www.gynecologyjournals.com
Received: 11-05-2023
Accepted: 18-06-2023

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Maternal Outcome and Early Neonatal Complications of Teenage Pregnancy

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DOI: <https://dx.doi.org/10.33545/26649861.2023.v5.i1a.21>

Abstract

Background: Teenage pregnancy is a problem in both developed and developing countries and has an increased risk of both maternal and fetal complication specially in developing countries like Bangladesh. Complication from pregnancy and childbirth were the leading cause of death for girls aged 15-19 years in poorer countries.

Objective: The aim of this study is to evaluate maternal outcome and early neonatal complications of teenage pregnancy.

Methodology: This prospective observational study was conducted at department of Obstetrics & Gynaecology, 200 Bed Hospital, Narayanganj from January 2011-June 2011. Consecutive 100 cases of 13-19 years old admitted pregnant women were included in this study and selected them purposively. Data was collected through a predesigned questionnaire, after taking informed written consent from patient and patient's party also permission taken from department & ethical committee during this study Data was checked and edited manually. And analyzed by SPSS (Statistical Package for Social Science).

Results: During this study period 62% mothers were aged 17-18 years, most of them (62%) came from poor socioeconomic condition and had primary education (60%). Only 35% cases used contraceptives 29% pregnancy were planned pregnancy and received regular antenatal checkup (23%). Maternal complications like severe anaemia (6%), PIH (14%), preterm labour (15%), prolonged labour (15%) obstructed labour (12%) post-partum hemorrhage (12%) were more. Teenage mothers also had increased risk of low birth weight babies (46%), birth asphyxia (18%), jaundice (16%), IUGR (9%), prematurity (18%) and associated with high perinatal death (14%).

Conclusion: The younger the mother, the higher the rate of maternal and neonatal complications so, more emphasis should be given on further reduction of teenage pregnancy. Adequate perinatal care of teenage mother is also essential for reducing the risk of complications in this age group.

Keywords: Maternal Outcome, Neonatal Complications, Teenage Pregnancy.

Introduction

Teenage pregnancy is defined as a pregnancy in a young woman who has not reached her 20th birthday when the pregnancy ends. The teenage period covers the age of 13-19 years. Worldwide, rates of teenage pregnancy range from 143 per 1000 in some of Sub-Sahara African countries to 2.9 per 1000 in South Korea [1]. In South Asian countries have high proportion of teenage pregnancies [2]. A study showed that nearly 60% of all girls are married by the age of 18 years and one fourth are married by the age of 15 years in South Asia [3]. Within South Asia the recorded teenage pregnancy rate is highest in Bangladesh 35% followed by Nepal 21% and India 21% [4]. Pregnant teens are at great risk of health problems including anemia, pregnancy-induced hypertension, Pre-eclampsia, eclampsia, depressive disorder, prolonged labour, preterm labour obstructed labour, failure of lactation or inadequate lactation, postpartum haemorrhage and sexually transmitted infections [5, 6]. Children of teenagers are more likely to have low birth weight, premature delivery, neonatal morbidities like asphyxia, jaundice, respiratory distress syndrome and neonatal mortality. While babies born to mother younger than fourteen years are 50% more likely to die than babies born to mother older than twenty years. Still birth is also significantly higher in teenage pregnancy [7]. Complications from pregnancy and childbirth are the leading cause of death in young women aged 15 to 19 in developing countries. An estimated 70000 adolescent mothers die each year because they have children before they are physically ready for parenthood [8].

Teenage age mother are twice as likely as older women to die from pregnancy and childbirth related complications. And maternal mortality is five times higher for mothers aged 10 to 14 than mothers aged 20 to 24%^[9]. Pregnant teens are at great risk of health problems including anemia, pregnancy- induced hypertension, Pre-eclampsia, eclampsia, depressive disorder, prolonged labour, preterm labour, obstructed labour, failure of lactation or inadequate lactation, postpartum haemorrhage and sexually transmitted infections^[10, 11]. Children of teenagers are more likely to have low birth weight, premature delivery, neonatal morbidities like asphyxia, jaundice, respiratory distress syndrome and neonatal mortality. While babies born to mother younger than fourteen years are 50% more likely to die than babies born to mother older than twenty years. Still birth is also significantly higher in teenage pregnancy^[12].

Materials and Methods

Study Design: It is a prospective observational study.

Study Place: Department of Obstetrics & Gynecology, 200 Bed Hospital, Narayanganj. This is a specialized & important referral hospital in Bangladesh. Most of the patients from Munsigaonj, Narayann & Norshindy are referred to this hospital.

Study Period: From January 2011 to June 2011.

Sampling Technique: Purposive sampling technique used to include the study subject.

Study Population and Sample Size: Consecutive 100 cases of 13-19 years old admitted pregnant women who agreed to participate this study.

Inclusion Criteria:

1. 13-19 year's old pregnant women who are admitted in this hospital for delivery.

Exclusion Criteria:

- Age below 13 and above 19 years.
- Pregnancy with
 - Juvenile diabetes mellitus
 - Systemic lupus erythematosus
 - Chronic hypertension
 - Chronic renal disease
 - Chronic liver disease
 - Rheumatic valvular disease
 - Congenital heart disease
 - Tuberculosis
 - Syphilis & other disease which can affect the maternal and fetal out coma.

Research instruments: A predesigned questionnaire.

Data Collection Procedure: At first 13-19 years admitted pregnant women were selected purposively and data collection procedure as well as advantage, disadvantage and objectives of this study explained to them, then data were collected through a predesigned questionnaire by history taking & physical examination.

On admission into labour ward, a questionnaire was filled up. Monthly income was assessed. Patients were grouped according to their average income as mentioned in the questionnaire.

Quality of life was assessed by questioning about patient's educational status, activity at home and employment. Patient was asked about their knowledge of contraception and use of contraceptives. Details about antenatal check-up was asked and records were evaluated for any antenatal complication like anaemia, ante partum haemorrhage, pre eclampsia etc. Gestational age was recorded date of last menstrual period or by month since the patient had amenorrhea or by Ultrasonography report at early weeks of gestation where available. Patient's state of anemia, oedema, jaundice was assessed clinically. Pulse and blood pressure was measured. Urine for albumin was tested. Available standard care provided to all and mode of delivery was recorded also. Perinatal mortality was calculated by fetal death after 28 weeks of gestation up to death within one week of delivery. At birth, babies were examined for any congenital malformation. Babies were assessed by Apgar score at 1 and 5 minutes after birth, birth weight was taken after admission to neonatal ward information collected from recorded and final perinatal outcome was noted.

Data Analysis Procedure: After collection of required information data were checked and edited manually then analysed by statistical package for social science (SPSS).

Result

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Table 1: Demographic characteristics of teenage mothers (N=100)

Age of the patients in years	No	Percentage (%)
15-16 years	15	15%
17-18 years	62	62%
19 years	23	23%
Occupation		
House wives	81	81%
Garments Workers	12	12%
Day Labors	2	2%
Maid Servants	3	3%
Service Holders	2	2%
Educational status of patients		
No education	12	12%
Can sign only	18	18%
Primary education	60	60%
Secondary education	8	8%
Higher secondary	2	2%
Monthly Income		
<5000 tk	62	62%
5000 tk to 10000 tk	22	22%
10000 tk to 15000 tk	9	9%
>15000tk	7	7%

From the above table shows that maximum (62%) teenage pregnancy occurred in the age distribution between (17-18). The above table shows that majority of teenage patients are housewives (81%). Others are garments worker 12% day labor 2%, maid servants 3%, service holders 2%. Majority of the mothers had primary education (60%), followed by can sign only 18%, No education 12%, secondary education 8% & higher secondary 2%. The above table shows that socio economic condition of teenage patients is poor. 62% patients of teenage pregnancy had income below 5000 tk per month, followed by 22% between tk 5000tk to 10000 tk, 9% between 10000 tk to 15000 tk and only 7% were under the income group of >15000 tk. The above fig-1 shows that there are little tendency of contraceptive use among teenage mothers. 65% had never use it, 12% had irregular use, 15%

mothers had contraception used by themselves and 08% of patient's husband used it.

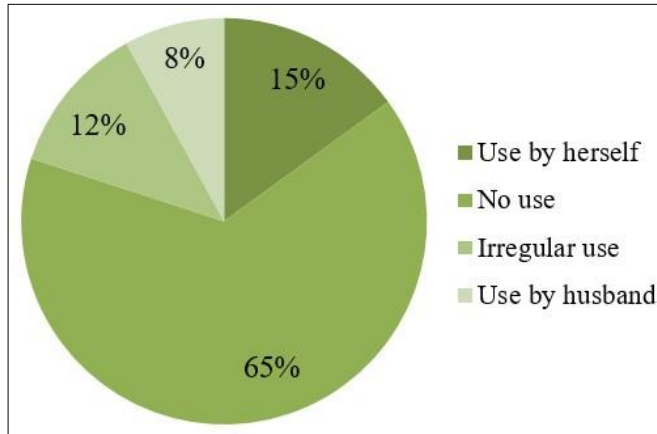


Fig-1: Use of contraceptives among teenage patients.

Table 2: Antenatal checkup, gestational age and obstetrical history of teenage mothers (N=100)

Antenatal checkup	No of pts	Percentage
Regular	23	23%
Irregular	59	59%
None	18	18%
Gestational age at admission		
<28 weeks	2	2%
28-37 weeks	16	16%
37-42 weeks	78	78%
>42 weeks	4	4%
Obstetrical history		
Multi gravida	30	30%
Primigravida	70	70%

The above table-2 shows that most of the patient had either irregular or no checkup. Only 23% had regular antenatal

checkup. 78% of teenage mothers got themselves admitted in the hospital at gestational age between 37-42 weeks followed by 16% at 28-37 weeks, 4% at 42 weeks and 2% patient at <28 weeks. The above table shows that most of teenage mothers were primi (70%).

Table 3: Antepartum complications, mode of delivery and intra-partum complications of teenage mothers (N=100)

Antepartum complications	No of Pts.	Percentage
Preterm labour	15	15%
Pre-eclampsia	8	8%
Eclampsia	6	6%
Intra uterine fetal death	3	3%
Severe anaemia	6	6%
IUGR	9	9%
Others	3	3%
Mode of Delivery		
Spontaneous Vaginal Delivery	28	28%
Induced Vaginal Delivery	24	24%
Assisted Vaginal Delivery	4	4%
L.U.C.S	42	42%
Others	2	2%
Intra-partum complications		
Prolonged labour	15	15%
Obstructed labour	12	12%
Genital tract injury	9	9%
Uterine atony	8	8%
Others	6	6%

The above table-3 shows 50% of teenage mothers suffered from various antenatal complications. Among them 15% suffered from preterm labour followed IUGR 9%, pre-eclampsia 8%, severe anaemia 6%. 42% of teenage mother had LUCS, 28% had spontaneous vaginal delivery, 24% had induced vaginal delivery, 4% had assisted vaginal delivery & others 2%. Among 52% of teenage mothers suffered from various intrapartum complications.

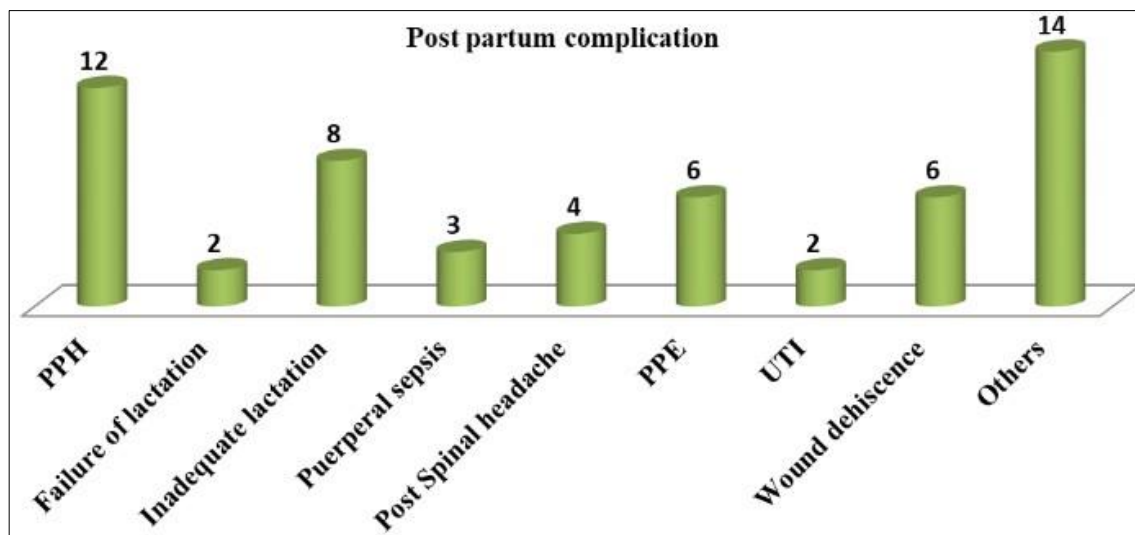


Fig-2: Post-partum complications.

The above fig-2 shows 57% of teenage mother suffered from post-partum complications of them 12% had PPH, 8% had inadequate lactation, 6% wound dehiscence, 6% PPE,

puerperal sepsis, 2% UTI & failed lactation and 14% had others complications.

Table 4: Perinatal Outcome, Weight and Morbidity of the babies (N=100)

Perinatal outcome	N	%	Birth weight	N	%	Morbidity of the baby	N	%
Live birth	91	91%	<2.5kg	46	46%	IUGR	9	9%
Take home alive	86	86%	2.5kg	22	22%	Prematurity	8	8%
Early neonatal death	5	5%	>2.5kg	32	32%	Birth asphyxia	18	18%
Still birth	9	9%	-	-	-	Congenital anomalies	3	3%
-	-	-	-	-	-	Jaundice	16	16%
-	-	-	-	-	-	Septicemias	2	2%
-	-	-	-	-	-	Others	7	7%

Above Table-4 shows that 91% babies were born alive, among them 86% take home alive and 5% were early neonatal death there also 6% were stillborn. 46% of the new born baby had birth weight less than 2.5 Kg, 22% had 2.5 kg & only 32% had >2.5 kg. Among 41% babies needed admission in neonatal ward. The babies suffered from various complications among the above table shows that 63% them 18% of the babies developed birth asphyxia, 16% jaundice. 9% IUGR, 8% prematurity, 3% congenital anomalies and 7% suffered from other complication.

Discussion

The present study was done on 100 (Hundred) teenage patients admitted in 200 Bed Hospital, Narayanganj important referral hospital in Bangladesh. So the present study reflects well about teenage characteristics and adverse outcome of their pregnancies who attended a tertiary hospital. In order to measure the effect of age, three comparison groups have been identified. The maximum teenage pregnancy occurred in the age. Distribution between 17-18 years (62%) which is similar to the study of Nikhil roy, MR. ABM Khorshed in which 57% of pregnancy occurred in this age group [13]. The series shows majority of the teenage mothers were Muslim. This attributed to the Muslim majority society of Bangladesh. Regarding occupation of respondents 78% were housewives, which is very similar to the study done by S. Shawky and M. Milaat (68%) [14]. Educational status of the teenage patients and their husbands show very low educational background of the respondent. Here the mothers had primary education in 60% cases followed by "can sign only" in 18% and no education 16%. Regarding the husbands' education 48% had primary education followed by "can sign only" 16%-Secondary education 14% and no education 6%. There were no use of contraception among 65% of the mothers Use of contraceptive among the study women were 15%, followed by use by husband 8%, compared to about 29.8% for all married women of different ages in Bangladesh. Verma K Khatri S Reported that very few had ever used any of contraception; as a result considerable numbers of teenaged mothers reported unplanned (47%) and undesired (34%) pregnancies [15]. Possible reason for such outcome according Goonewardena *et al.* is that the majority of teenage girls are unaware of the process of conception & dangers of pregnancy before the onset of pregnancy [7].

This study also shows that economic condition of teenage patient is poor. Most of the patients were of low income group that is <tk. 5000 per month. It was about 62% followed by 22% patient between tk. 5000-tk. 1000, 9% patients had monthly income. Only 7% patient had monthly income of more than tk. 15000. This reflects that increased teenage pregnancy is more among low income group. By using a retrospective study, Sharestha demonstrated that the incidence of teenage pregnancies is significantly higher in

the lower social classes (52%) than the higher social classes (26%) which is nearer to this study [16]. Most of the patients in the study were primigravida 70%. Most of them had unplanned pregnancy. In this series it was about 71%. Majority of these young women did not seek antenatal care, here most of the patient had either irregular or infrequent of no antenatal checkup. So there were more complications during pregnancy. Only 23% sought regular antenatal care. Compared to other study eg in Rani *et al* only 20% sought antenatal checkup. The reason appears to be indifference as inadequate knowledge of pregnancy and antenatal care [17]. Since the study was conducted among hospital teenage mothers, the cause of admission is to emphasize. Here we see only 36% patients were admitted for full term pregnancy with labour pain. And the rest 64% were admitted for pregnancy related complications signifying increased frequency of complications among teenage mothers. These include prolonged labour (15%), obstructed labour (12%) eclampsia (6%). preterm labour (15%) and pre eclampsia (8%). In Ashk Kumar's study also shows teenage pregnancy had more risk of pre-eclampsia 4.3% eclampsia 4.9%, preterm labour 26.1% [9]. Regarding clinical parameter of the patient the incidence of anemia was much higher. Most of the teenage mothers (78%) were anemic. Either in mild, moderate or severe form almost similar to study by Anito Pal *et al.* In this study duration of labour was prolonged in 48% cases which similar to Nigar sultana's study shows prolonged first stage 34% and prolonged second stage 14% [18].

The rate of caesarean section is high among teenage pregnancies. Frequency of linked either to assisted and induced vaginal delivery also high. This could be incomplete physical development and or to the local obstetrical practices and choices. In this study 42% teenage mothers had LUCH, 28% had spontaneous vaginal delivery. 24% had induced vaginal delivery and 4% had assisted vaginal delivery. The indication of LUCS in this study were obstructed labour 12% prolonged first stage with foetal distress 4% prolonged second stage with foetal distress 6%. This results coincides with the study of Bacci *et al.* [19]. In morteza's study shows that the rate of cesarean section was 30.9% among teenage group and indication for caesarian section were fetal bradycardia, pre-eclampsia premature rupture of membrane & malpresentations [20]. Regarding the perinatal outcome 86% of the babies were alive. Of them 42% required resuscitation, 8% were dead and 6% were still birth. In this study 46% of babies were low birth weight and regarding morbidity of the baby, 18% of the babies were birth asphyxiated, 16% of the babies developed jaundice IUGR 9% prematurity 8% congenital anomalies 3%. Which coincide with the study of Nigar Sultana. In that study 48% of babies were low birth weight and regarding morbidity of the baby-18 of the babies were birth asphyxiated, 24% of the babies developed jaundice IUGR

8% prematurity 6% congenital anomalies 3% perinatal mortality rate was 14%. The causes of mortality found in the study are due to Birth asphyxia 29%, followed by prematurity 22% IUGR-14% premature rupture of membrane 7% and others 14%^[18]. Tej shing Sriparna Basu shows that teenage pregnancy was associated with higher fetal (1.9%) and neonatal mortality (3.8%)^[9]. These results refer to special situation of a developing country like Bangladesh characterized by poverty and illiteracy. Early marriage and pregnancy was highest among illiterate mothers. Teenage pregnancy was associated with higher risk for herself as well as for baby.

Conclusion

A pregnant teenage "a child in child" has to meet the growing demands of her fetus in additional to her own growing needs, and thus putting her in a stressful situation and associated with a significantly higher risk of PIH, PE preterm labour, prolonged labour and adverse perinatal outcome. The younger the mother, the higher the rate of maternal and neonatal complications A sincere approach to the problem, preventive interventions and appropriate care during pregnancy, delivery and to neonates can do much in improving the situation.

Recommendation

1. Building awareness about the consequences of teenage pregnancies among people is very important.
2. More emphasis should be given on further reduction of teenage pregnancy either by awareness, education, delaying the age of marriage or by increasing the use of any contraceptive method.
3. In case when there is a pregnancy occur during teenage, there should take special care & regular antenatal checkup should ensure so that the major complications can be adequately dealt with.

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

Sikder M, Nancy FA, Shammi TK, Sultana M, Alam J. Maternal outcome and early neonatal complications of teenage pregnancy. International Journal of Contraception, Gynaecology and Obstetrics. 2023;5(1):34-38.

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