

Obstetric Outcomes of Teenage Pregnancies: A Hospital-based Study in a Tertiary Care Center

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ABSTRACT

Background: Teenage pregnancy is a pregnancy in a woman of age group 10-19 years which is a worldwide public health problem in both developed and developing countries. Pregnancy during this period is usually unplanned and is associated with increase maternal and perinatal morbidity and mortality. The overall aim is to study the obstetric outcome in teenage pregnancy and comparing them with the adult group. **Materials and methods:** - A hospital-based study was conducted among teenager primiparous women aged 13-19 years while comparing them with 20-24 years primiparous delivering in the department of obstetrics and gynaecology in Pokhara, Nepal from July 20, 2017 to November 12, 2017. Medical details of the patients were retrospectively collected from the medical record section and used to record sociodemographic features, mode of deliveries, and gestational age at delivery, fetal and maternal outcomes on a structured observational checklist. **Results:** The incidence of teenage pregnancy was 11.22%. The mean age of teenager and control groups were 18.17± 0.86 and 22.13± 1.61 years respectively. The incidence of teenage pregnancy was higher in Dalits. Literacy was another factor that made a significant difference. The study group in comparison with the control had more vaginal delivery without episiotomy and less cesarean delivery. But there was no statistical significance in the incidence of instrumental delivery. The incidence of live birth, intrauterine fetal death, neonatal death and NICU admission had no statistical significance. **Conclusion:** Teenage pregnancy had more vaginal deliveries and less cesarean sections. Teenage pregnancy is not associated with adverse maternal and fetal outcomes.

Keywords: Comparative study, obstetric outcome, teenage pregnancies

INTRODUCTION

Women at both extreme ends of the reproductive age spectrum have unique obstetric outcomes to be considered. Adolescent period is a transitional phase of physical and mental development with biological, social and psychological changes and pregnancy during this period is usually unplanned and is associated with increase maternal and perinatal morbidity and mortality. Teenage pregnancy is a pregnancy in a woman of age group 10-19 years.¹ It is a worldwide public health problem in both developed and developing countries. It results from a number of factors; early age at marriage, illiteracy, poverty, premarital sex, lack of awareness and access to contraception. The incidence of teenage pregnancy varies by country. There are

about 130 million of birth per year globally and one tenth of it are by teenage mothers and 90% of these are occurring in the developing countries.² Sub-Saharan Africa has the highest teenage pregnancy rate with the incidence of 143 per 1000 girls aged 15-19 years.³

In South Asia, teenage pregnancy is highest in Bangladesh 35% followed by Nepal 21% and India 21%.⁴ The incidence of teenage pregnancy is 9.7% as revealed by a study conducted in Nepal Medical College Teaching Hospital.⁵ The total population of Nepal in 2011 was 26,494,504 of which about 24.19% was of the adolescent population aged 10-19 years.⁶ The percentage of married women in the teenage group of 15 to 19 years was 28.8%.⁶

In Nepal, the total fertility rate was 2.3% in 2016 and fertility rate per 1000 women in the age group 15-19 years was 88 in 2016 (urban-66, rural-125).⁷ In Nepal rapid population growth, low socioeconomic status, poverty and illiteracy are mainly responsible for early marriage and child-bearing thus increasing the adolescent pregnancies. Evidence on the obstetric outcome of teenage pregnancy are conflicting. Several studies have found an increased incidence of anemia, preterm labor and prematurity, low birth weight and an increased incidence of operative deliveries among teenagers.^{8,9,10} 29% of the low birth weight was found in the age group of 15-19 years.¹¹ Pregnant teenage is at higher risk than their older counterparts. There is double risk of mortality due to obstetric causes in women aged 15-19 years when compared to women in 20-24 years.¹ Contradictorily, some studies have found favorable obstetric outcome in teenage pregnancy. There is no or little differences in the obstetric complication in teenage pregnancy compared to the adult group if they get equal access to the antenatal care service.¹²

MATERIALS AND METHODS

It is a hospital-based study conducted on teenager primiparous women aged 13-19 years while comparing them with 20-24 years primiparous delivering in the department of obstetrics and gynaecology immediately after the teenage in the study group and fulfilling the inclusion criteria at PAHS (Pokhara Academy of Health Sciences), WRH, Pokhara, Nepal from July 20, 2017 to November 12, 2017.

Teenage pregnancy younger than 13 years, multiparous teenage pregnancy, multiparous pregnancy aged 20-24 years, both group with preexisting medical diseases (heart diseases, overt diabetes, chronic hypertension, renal diseases) and twin pregnancies were excluded from this study.

During the study period, there were total of 2914 deliveries, of which 327 were of teenage group. A total of 300 teenage pregnancies were eligible after the exclusion and their obstetric outcome were analysed and compared with the adult group of 20-24 years, which were delivered immediately after the study group.

Medical details of the patients during the study period were retrospectively collected from the hospital record section and the required medical records and case materials were collected. Every required detail were then used to record sociodemographic features, mode of deliveries, gestational age at delivery, fetal and maternal outcome on a structured observational checklist. To assure the data are collected correctly, each day after data collection, every information were reviewed and edited. Review and editing were done by two groups to minimize the error and data entry done in Microsoft Office Excel instantly. If a single error was noted then all the data were rechecked thoroughly. Statistical analysis was conducted using SPSS 22.0 software. The data were summarized in terms of frequency (percentage) and mean (standard deviation). Socioeconomic status was excluded from this study because of incomplete informations. The obstetric outcome was compared using Pearson's chi-square test. Fisher exact test were used to calculate the sample size of less than 5. P values <0.05 were considered to indicate statistical significance. Ethical approval from institutional review committee of PAHS, WRH was taken.

RESULTS

There were total 2914 deliveries during the study period, of which 327(11.22%) were of teenage group. Out of 327 teenage pregnancies, 27 were not included in this study because of exclusion criteria. A total of 300 teenage pregnancies were analyzed and compared with 300 adult pregnancies of 20-24 years. The mean age of teenage in our study was 18.17 ± 0.86 and that of control was 22.13 ± 1.61 years. The percentage of dalit was 36.67% Vs 22.67% in teenage and control group respectively, which was significant statistically. Similarly there was a statistical significance in the percentage of brahmin/chettri, 35.67% Vs 50%. The incidence of teenage pregnancy who were unbooked (53.67%) and from rural areas(64%) were not statistically significant from the control group (unbooked-42.33%, rural areas-58.67%). There was a significant difference between the incidence of illiteracy between the teenage and control group (30.67% Vs 11.3%).(Table-1)

Table 1. Maternal socio demographic characteristic			
Details	Teenage (13-19 years) n (%)	Control (20-25 years) n (%)	P value
Mean age	18.17±0.86	22.13±1.61	
Ethnicity:			
Dalit	110 (36.67%)	68 (22.67%)	0.00
Janajati	72 (24.0%)	78 (26.0%)	0.57
Brahimin/chhetri	107 (35.67%)	150 (50.0%)	0.00
Madhesi	8 (2.67%)	1 (0.35%)	0.01
Muslim	3 (1.0%)	3 (1.0%)	1.00
Others	0	0	-
Residence:			
Urban	108 (36.0%)	124 (41.33%)	0.17
Rural	192 (64.0%)	176 (58.67%)	0.17
Education:			
Illiterate	92 (30.67%)	34 (11.33%)	0.00
Primary	67 (22.33%)	25 (8.33%)	0.00
Secondary	115 (38.33%)	95 (31.67%)	0.08
Intermediate	26 (8.67%)	98 (32.67%)	0.00
Bachelor	0	38 (12.67%)	-
Doctorate	0	10 (3.33%)	-
Antenatal care:			
Booked	139 (46.33%)	173 (57.67%)	0.05
Unbooked	161 (53.67%)	127 (42.33%)	0.05
Total	300	300	

The study group in comparison with the control had more vaginal delivery without episiotomy (7.67% Vs 3.33%) and less cesarean delivery (10.67% Vs 19%). But there was no statistical significance in the incidence of instrumental delivery (5.33% Vs 4.67%). (Table 2)

Table 2. Comparison of mode of delivery			
Mode of delivery	Teenage (13-19years) n (%)	Control (20-25years) n (%)	p value
Vaginal delivery	23 (7.67%)	10 (3.33%)	0.01
Vaginal delivery with episiotomy	202 (67.33%)	191 (63.67%)	0.34
Vaginal delivery with perineal tear	27 (9.0%)	28 (9.33%)	0.88
Instrumental delivery (vacuum)	16 (5.33%)	14 (4.67%)	0.70
Cesarean delivery	32 (10.67%)	57 (19.0%)	0.00
Emergency	25	43	
Elective	7	14	

The incidence of live birth (99% Vs 98%), intrauterine fetal death (1% Vs 2%), neonatal death (0% Vs 0.67%) and NICU admission (0.33% Vs 0%) had no statistical significance. (Table 3)

Outcomes	Teenage (13-19years) n (%)	Control (20-25years) n (%)	P value
Live birth	297 (99.0%)	294 (98.0%)	
Intrauterine fetal death	3 (1.0%)	6 (2.0%)	
Neonatal death	0	2 (0.67%)	-
NICU admission	1 (0.33%)	0	-

Regarding the low birth weight in teenage and the control group, it was 17% Vs 13.67%, which was not statistically significant. Apgar score also had no statistical significant.No statistical significance was found in the gestational age at birth between the two group. (Table-4)

Details	Teenage (13-19years) n (%)	Control (20-25years) n (%)	P value
Fetal weight (grams):			
<2500	51 (17.0%)	41 (13.67%)	0.25
2500-4000	247 (82.33%)	253 (84.33%)	0.51
>4000	2 (0.67%)	6 (2.0%)	0.15
Apgar score in 1min.:			
0-3	8 (2.67%)	10 (3.33%)	0.63
4-6	121 (40.33%)	129 (43.0%)	0.50
7-10	171 (57.0%)	161 (53.67%)	0.41
Gestational age:			
<37 weeks	23 (7.67%)	19 (6.33%)	0.52
37- 40 weeks	177 (59.0%)	170 (56.67%)	0.56
>40- 42 weeks	91 (30.33%)	105 (35.0%)	0.22
>42 weeks	9 (3.0%)	6 (2.0%)	0.43

Maternal complications were also compared between the two groups.The incidence of preeclampsia was

higher in the teenage (3%) than the control (1.33%), but eclampsia was less in teenage (0.33%) than the control (0.67%), but both being not significant statistically. The incidence of maternal anemia, fetal malpresentations (2.33% Vs 4.0%) , Rh-ve status (0.67% Vs 0%), intrauterine growth retardation (0% Vs 0.33%), antepartum haemorrhage (0% Vs 0.33%),

oligohydramnios (0.67% Vs 0.67%) ,cephalopelvic disproportion (6.33% Vs 3.33%), postpartum haemorrhage (0.33% Vs 0.33%) and retained placenta (0.33% Vs 0%) were also found to have no statistical significance. (Table-5)

Complications	Teenage (13-19years) n=300	Control (20-25years) n=300	P value
Pre eclampsia	9 (0.33%)	4 (0.33%)	0.16
Eclampsia	1 (0.33%)	2 (0.67%)	1.00
Mal presentation	7 (2.33%)	12 (4.0%)	0.24
Rh -ve	2 (0.67%)	0	-
Intra uterine growth retardation	0	1 (0.33%)	-
APH	0	1 (0.33%)	-
Oligohydramnios	2 (0.67%)	2 (0.67%)	1.00
CPD	19 (6.33%)	10 (3.33%)	0.12
PPH	1 (0.33%)	1 (0.33%)	1.00
Retention of placenta	1 (0.33%)	0	-
Anamia:	72 (24.0%)	76 (25.33%)	0.70
Mild	64 (21.33%)	66 (22.0%)	0.70
Moderate	8 (2.67%)	10 (3.34%)	0.84
Severe	0	0	0.63
Total	114(38.0%)	109 (36.33%)	0.67

DISCUSSION

Teenage pregnancy is considered as a public health problem and a high risk pregnancy and not an ideal age for marriage and conception all over the world. Data from the National Family Health Survey (NFHS) revealed that 16% of women of 15-19 years had already started bearing children.¹³ The incidence of teenage pregnancy in our study was 11.22%, whereas it was 9.7% in a study conducted in NMCTH⁵ and the highest recorded incidence in South Asia was seen in Bangladesh as 35%.⁴ The mean age of teenage pregnancy in our study was 18.17±0.86 years and that of control was 22.13±1.61 years. A study was done by Talwar et al also observed similar results in SDM Medical College in India.¹⁴ The incidence of teenage pregnancy varied among various ethnicity and more were seen in the Dalits. In Brahmins and Chettris, the incidence of pregnancy in the control were more than that in the teenage. This significant differences may be due to the higher education in Brahmin and Chettri and more use of the health services. literacy was another factor that made a significant difference. It was observed that ANC services were equally utilized by both groups, which may be attributed to safe motherhood programme providing free delivery services, similar to a study done by Saxena et al where the number of booked women in both age groups were similar.¹⁵ The incidence of preterm labor was

almost similar in both groups in our study, similar to a study conducted by RC L et al in Patan Hospital which revealed no association between the teenage pregnancy and preterm labor.¹¹ Another study by Pun and Chauhan revealed that the incidence of preterm delivery (7% Vs 11.5%) and low birth weight (28% Vs 25.7%) were almost similar in both groups.¹⁶ This is in contrast to a study done by Tripathi M et al where the incidence of preterm delivery is more in teenage than the control group.¹⁷

The incidence of vaginal delivery in teenage and control were 84% and 76.33% respectively in our study. Cesarean delivery was less in teenage than the control (10.67% Vs 19%), but instrumental deliveries were found to be similar in both groups. A study by Pun and Chauhan elucidated no differences in the incidence of vaginal and cesarean delivery.¹⁶ This may be due to the fact that the incidence of low birth is higher in teenage than the control even though not significant statistically, favoring vaginal delivery. Because of the change in the lifestyle, diet, television and medias there is early physical development and menarche preparing them to deal with pregnancy and childbirth. Fetal outcome in terms of live births, intrauterine fetal death, Apgar score between the two groups did not reveal any significant differences. There was no significant difference in the incidence of anemia between the

two groups in this study, whereas a study by P Saxena et al concluded that the prevalence of anemia was high in the control than the teenager.¹⁵ Regarding the pregnancy-related complications like preeclampsia, eclampsia, malpresentation, Rh-ve status, IUGR, APH, oligohydramnios, CPD, PPH and retained placenta, both the groups had similar results. This is similar to a study by Tt Lad et al which concluded that there were no differences in the incidence of APH (2.4% vs 4.2%) and preeclampsia (5.2% vs 5.8%).¹⁸ Similarly, a study in Southeast Nigeria revealed that teenage pregnancy was less likely to have APH and preeclampsia.¹⁹ The obstetric outcome of teenage and control group was almost similar in this study. The possible explanation is because the mean age of teenage in our study was 18.17±0.86 years and it is seen that most complications are seen in less than 15 years. There was no pregnancy in 13 years, 1 in 14 years and 2 in 15 years. Another reason may be because the use of antenatal services by both the groups were similar and safe motherhood programme providing free delivery services thus encouraging institutional deliveries.

CONCLUSION

Teenage pregnancy had more vaginal deliveries and less cesarean section. Teenage pregnancy when compared with adult control group was not associated with adverse maternal and fetal outcomes. There were no statistical significance in obstetric outcomes between the two groups.

FURTHER SUGGESTION

Teenage pregnancy itself is not associated with adverse pregnancy outcome if they are given equal access to the utilization of quality antenatal care and encourage institutional delivery. Under-utilization of the antenatal and delivery services rather than the maternal age determines the obstetric outcome.

Even though evidence show favorable outcome in teenage pregnancies in this study, it should be discouraged as far as possible as it is a leading cause of maternal and perinatal morbidity and mortality as stated by many studies. The law prohibiting child marriage in Nepal should be strengthened and strictly followed. Easy access to good quality antenatal care and maternity services should be made available. Hospital delivery with skilled birth attendants should be encouraged. Adolescent health programme should be enforced and given top priority by the government thus reducing the incidence of teenage pregnancies.

SOURCE OF SUPPORT: Nil

CONFLICT OF INTEREST: None

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