

## Original Article

# A comparative study of pregnancy outcome between teenage pregnancy and older reproductive age group in a rural University Teaching Hospital of Nepal

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## Abstract

**Introduction:** Teenage pregnancy is a common public health problem worldwide and is considered as high-risk pregnancy in terms of health of both mother and child. The objective of this study was to find the incidence and outcome of teenage pregnancy in comparison to older women who delivered in Karnali Academy of Health Sciences Teaching Hospital.

**Methods:** This is a hospital based cross-sectional comparative study conducted in Labor Unit of Karnali Academy of Health Sciences, Jumla over a period of one year from July 2016 to June 2017. The hospital data was retrieved and divided into two groups i.e. teenagers and older age and was compared in terms of incidence and maternal and fetal outcome of pregnancy. The data were analyzed using software package SPSS 16.

**Results:** This study showed that incidence of teenage pregnancy was 24.14%. Maternal and fetal complication like eclampsia/preeclampsia (7.63% vs. 0.44%), cesarean section (44.44% vs. 7.96%) preterm delivery (15.97% vs. 1.10%), small for gestational age (29.86% vs. 3.31%) and intrauterine fetal death (9.72% vs. 0.66%) occurred more frequently in teenagers in comparison to older age. Similarly, there was increased incidence of congenital anomalies (5.55% vs. 0.44%) among the neonates born to teenage mothers.

**Conclusion:** Incidence of teenage pregnancy in rural and resource-limited part of the country is high, which predispose them into increased risk of maternal and fetal complications like increased incidence of eclampsia/preeclampsia, cesarean section rate, prematurity and its complications, small for gestational age, congenital anomalies and intrauterine fetal death.

**Key words:** teenage pregnancy, maternal outcome, fetal outcome, rural

## Introduction

Pregnancy that occurs below the age of 20 years is teenage pregnancy. It is estimated that about 7.3 million girls become pregnant before they turn 18 every year<sup>1</sup>. The possibility of teenage pregnancy increases when girls do not get the right to make decisions about their sexual health and well-being. There are many causes of teenage pregnancy the main ones being lack of access to

sexual and reproductive health education and services. Another key factor is and approximately 90% of births to teenage mothers in developing countries occur within marriage. Some other factors like parents' income and also contribute to this. Girls who are less educated are 5 times more likely to become a mother than those with higher levels of education.<sup>1</sup>.

Teenage pregnancy continues to be a challenging public health issue around the world, mainly in developing countries like Nepal. According to the World Health Organization, 16 million girls aged 15 to 19 and about 1 million girls under 15 give birth every year worldwide—most in low- and middle-income countries<sup>2</sup>. According to Nepal Demographic and Health Survey 2016-overall, 17% of women age 15-19 had begun childbearing: 13% had had a live birth. The proportion of teenagers who had begun childbearing rises rapidly with age, from 2% at age 15 to 36% at age 19. Rural teenagers tend to start childbearing earlier than urban teenagers do. Globally, complications during pregnancy and childbirth are the second causes of death for 15-19 year-old girls. Newborns born to adolescent mothers face a significantly higher risk of dying than those born to women aged 20 to 24<sup>2</sup>.

There is increased vulnerability of adolescent female due to various biological and social causes and they are more prone for pregnancy and child bearing as well as diseases and conditions like sexually transmitted infections (STI), substance abuse and accidents<sup>3</sup>. Pregnancy of a still growing girl means an increase in nutritional requirement both for growth of fetus as well as mother<sup>4</sup>. This inevitably leads the teenage mother to the effect of malnutrition and she suffers from various pregnancy complications like obstructed labor, retardation of fetal growth, premature birth etc. Teenage mothers seem to be at higher risk of child bearing with high perinatal risk<sup>5</sup>. The children of teenage mothers are at greater risk of lower intellectual and academic achievement, health complications, social behavior problems and problems of self-control than are children of older mothers, primarily due to the effects of single parenthood, lower maternal education, and large family size. It is also proven that teenage mothers have a higher incidence of low birth babies<sup>5</sup>.

Teenage pregnancy is dangerous for the mother. According to WHO factsheet 2014, although adolescents aged 10-19 years' account for 11% of all births worldwide, they account for 23% of the overall burden of disease (disability- adjusted life years) due to pregnancy and childbirth. The biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition and stress influence the outcome<sup>6</sup>. Studies show maternal and fetal mortality and morbidity is directly related to the age of the mother<sup>7</sup>. Teenage pregnancies have shown association with higher risks

of prematurity, low birth weight, preeclampsia and anemia as compared to adult pregnancies<sup>7,8,9</sup>.

Methods

This is a retrospective hospital based study done in Labor Unit of Karnali Academy of Health Sciences (KAHS), Jumla over a period of one year from July 2016 to June 2017. The objective of this study was to find the incidence and outcome of teenage pregnancy in comparison to older age pregnant women who delivered in KAHS Teaching Hospital. Inclusion criteria were: incidence and outcome of pregnancy of 19 years and less was compared with older reproductive group. Performa was created; information was collected from the Labor room records and data analyzed. The data showed that 144 were teenagers out of 596 women delivered in KAHS during the above-mentioned period.

Results

We found that a total of 596 women received maternity care during above mentioned period at KAHS Teaching Hospital, Jumla, out of which 144 (24.16%) were teenagers. This study showed that incidence of teenage pregnancy is a common problem in rural part of the country and is associated with increased maternal and fetal complication.

Table 1. Comparison of Mode of Delivery

Total number of deliveries in one year=596		
Mode of delivery	Age 19 and below=144 (%)	Age 20 and above=452 (%)
Normal Vaginal delivery	73(50.70%)	390(86.28%)
Operative vaginal delivery	7(4.86%)	26(5.75%)
Cesarean section	64(44.44%)	36(7.96%)

This study also showed that only 50 percentages of teenage pregnant women attending KAHS teaching hospital had normal vaginal delivery and 44.44% had cesarean section which is very high in comparison to the pregnancy above 20 years i.e. 86.28% normal delivery and 7.96% cesarean delivery. The high cesarean section rate among teenagers could be due to various reasons. Patients are referred to KAHS teaching hospital from the various birthing centers of Jumla, Kalikot and Mugu districts and some centre of Dolpa district for any

obstetric complications. Most of the cesarean sections are done for these referred patients.

**Table 2. Comparison of complications of pregnancy outcome**

Complications	Age 19 and below=144 (%)	Age 20 and above=452(%)
Preterm delivery	23(15.97)	5(1.10%)
Small for gestational age(SGA)	43(29.86)	15(3.31%)
Intrauterine Fetal death(IUFD)	14(9.72)	3(0.66%)
Congenital anomalies	8(5.55)	2(0.44%)
Preeclampsia/eclampsia	11(7.63)	2(0.44%)
Cervical/vaginal laceration	4(2.77)	3(0.66%)

This study showed that the incidences of various complications are high in teenage pregnant women in comparisons to the pregnancy above 20 years of age. The complications include eclampsia/preeclampsia (7.63%), high incidence of preterm delivery (15.97%), small for gestational age babies (29.86%), and intrauterine fetal death (9.72%). Likewise, incidence of birth of grossly anomalous fetuses was also high in teenage pregnancy (5.55%).

## Discussion

The objective of this hospital based cross-sectional comparative study was to find the incidence and explore the possible effects of teenage pregnancy in terms of both maternal and neonatal adverse outcomes. The results of most previous studies evaluating the effect of adolescent pregnancy on perinatal outcome and its obstetrics risks is not uniform. However, there is a general agreement that adolescent pregnancy is associated with high risk of serious obstetric complications and poor neonatal outcomes such as preeclampsia, significant anemia, and mechanical and operative delivery<sup>10</sup>,

The incidence of teenage pregnancy was 24.16% which is relatively high in comparison to many other studies. The tradition of teenage marriage is a common practice in rural and remote part of Nepal like Karnali region. Literacy rate is very low in this region and lack of health and sex education is contributing to teenage marriage and pregnancy. Karnali province is far below

the national human development indices and has highest maternal and neonatal mortality rates in Nepal.

This study showed that teenage pregnancy is associated with increased incidence of SGA among neonates born to teenage mothers in comparison to adult mothers'. Our finding was consistent with many other studies<sup>11,12</sup>. However, two previous studies<sup>13, 14</sup> found that the risk of SGA was not associated with teenage pregnancy. In both above studies, the adequacy of prenatal care and the level of education among the pregnant mothers were not controlled which could have been important confounder in association between teenage pregnancy and incidence of SGA neonates.

This study showed that the chance of preterm delivery is high in teenage mothers. As a result, the newborn is exposed into possible complications of prematurity in terms of both high morbidity and mortality; these findings are consistent with some other studies<sup>11,15</sup>.

The present study also showed that there is increased risk of preeclampsia/eclampsia among teenage pregnant women in comparison to adults, which is consistent with many other studies<sup>16, 17, 18</sup>. However, the incidence of anemia was not seen high among the teenagers in present study which was a common finding in other studies<sup>17, 18</sup>. This finding is likely due to the location of the present study site .i.e. high altitude of 2500meters.

The incidence of intrauterine fetal death and gross congenital anomalies mainly neural tube defects were also seen high among the teenagers in this study. Majority of the pregnant teenagers did not have any antenatal checkups and there was no anomaly ultrasound scan done. Lack of preconception counseling and antenatal care is a major contributor for these findings. Preconception and early pregnancy supplementation of folic acid could have prevented many congenital anomalies like Neural Tube Defects (NTDs). This finding is consistent with many other studies. Of those studies investigating the link between teenage pregnancy and still birth, Khandait et al.,<sup>19</sup> found an association 3% (p<0.05) compared to the mothers at 20-29 age years group (2%). Other two studies have also reported similar type of results; 18 (3%) by Shrestha<sup>20</sup>(2002) and 3 (2%) by Weerasekera<sup>21</sup> (1997) in terms of teenage pregnancy and still birth.

The incidence of cesarean delivery rate among teenagers is variable in various studies. It was high (44%) among teenagers in comparison to adults (8%)

in the present study. This huge difference could be due to various regions. The incidence of teenage pregnancy as such is high in the Karnali region which is due to the tradition of child and teenage marriage which is a very common practice in this area. The literacy rate is low and school dropout rate is high which is again contributing to teenage marriage and pregnancy. Many of the teenage mothers are not prepared for becoming mother both psychologically and physically which directly or indirectly contributes to failure to normal vaginal delivery. Moreover, many of these patients are referred from surrounding birthing centers of Mugu, Kalikot, Dolpa and Jumla districts after complications and they eventually land up into cesarean section. The cesarean section rate among the teenage mothers was higher side in Nigerian studies<sup>22,23</sup> whereas other studies showed lower rates<sup>24,25</sup>. The high incidence is probably because of the large number of unbooked patients who had complications necessitating emergency cesarean section. This is, however, in contrast to the finding of a study in Scotland<sup>26</sup> which shows no risk of increased cesarean section rate.

This study does have many limitations. We estimated the gestational age based on self-reported last menstrual period because there were very less antenatal check up and no dating ultrasound scanning in most of the cases. Last menstrual period was more likely to be uncertain among teenagers than among older women. Many factors which may affect the maternal as well as fetal outcomes like smoking habits, intake of folic acid and other prenatal vitamins are not known. We were also not able to compare detailed perinatal and neonatal outcomes except for some of the pregnancy outcomes.

## Conclusion

In this study, we found that there is high incidence of teenage pregnancy in rural and resource-limited part of the country than in urban areas. Teenage pregnancy predispose them into increased risk of maternal and fetal complications like increased cesarean section rate, prematurity, small for gestational age, intrauterine fetal death and congenital anomalies. We observed that there is huge need of expanding health and sex education, prenatal education, education on family planning to the adolescents. Lack of proper education and provision of prenatal and obstetrical care in rural areas has been a major challenge in achieving safe motherhood goals.

**Conflict of interest:** None declared

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