

Outcomes of Pregnancy among Teenage Mothers: Hospital Based Study in Western Region of Nepal

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Abstract:

Background: In Nepal, early marriage is a tradition in some community and early childbearing is associated with various health risks for both mother and child. Some reported that teenage pregnancies were at increased risk for pre-term delivery, low birth weight, and neonatal mortality and the major maternal complications were Preterm labour, hypertensive disorders of pregnancy. The objective of the study is to identify the outcomes of the teenage pregnancy in Western Region of Nepal.

Methods and Materials: A retrospective study was conducted in the Western Regional Hospital, Pokhara, Kaski Nepal. Data was retrieved from the hospital records among the teenage mothers delivered in six months using purposive sampling technique.

Result: The incidence rate of teenage births was 13.14%. The mean age of teenage mothers was 18.15 ± 0.9323 years. Most (88.8%) of mothers were primigravida. The findings also revealed that risk factors like preterm delivery (11.5%), caesarean section (13.3%), 2.1% vacuum delivery, low birth weight (18.3%), low Apgar score (7.6%), obstructed labour (28.3%), oligohydramnios (15.2%), postpartum haemorrhage (14.1%), eclampsia (3.3%), birth asphyxia (12%), IUFD (4.3%) and stillbirth (2.2%). There is significant association between teenage pregnancy and postpartum haemorrhage and maternal morbidities ($p < 0.05$).

Conclusion

The study concluded that teenage pregnancy is highly associated with risk for both mother and newborn. Therefore awareness program could be helpful to reduce the problems related to teenage pregnancy.

Key Words: Teenage pregnancy, Preterm delivery, Neonatal mortality, Obstructed labour, Oligohydramnios, Postpartum haemorrhage, Eclampsia, Stillbirth

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I. Introduction

Adolescence is a period of transition from childhood to adulthood which extends from 11-19 years. Pregnancy during this period is called teenage pregnancy. It is one of the important prevailing social and public health problems in the world. The incidence of teenage pregnancy is increasing due to the early onset of puberty, increase sexual activities and lack of knowledge regarding contraceptives, especially in developing countries. About 21 million girls aged 15 to 19 years and some 2 million girls under 15 years become pregnant in developing regions. Approximately 16 million girls aged 15 to 19 years and 2.5 million girls' age 16 years give birth in same regions. Adolescent mothers aged (10 to 19 years) face higher health risks like eclampsia, systemic infections, etc and babies born to them too face higher risks of low birthweight, preterm delivery and severe neonatal conditions than those born to women aged 20 to 24 years. The complications during pregnancy and childbirth are the leading cause of death for 15 to 19 years-old girls globally¹.

Nepal is one of the low income countries where early marriage is a tradition in some community which indicate the high fertility rate among them. According to Nepal Demographic Health Survey (NDHS), Age specific fertility rate for adolescents aged 15-19 has declined in the last five years (from 2006) by 10%, however the figures is still high (8.1%) compared to other developing countries. This issue is almost twice as common in rural areas than in urban areas (2011)².

Studies from developed and developing countries regarding teenage pregnancy outcomes differ as some reported that teenage pregnancies were at increased risk for pre-term delivery, low birth weight (LBW), and neonatal mortality. The relation between teenage pregnancy and small for gestational age (SGA) has also been reported³.

Every year, an estimated 15 million babies are born preterm (before 37 completed weeks of gestation), and this number is rising. Preterm birth complications are the leading cause of death among children under 5 years of age, responsible for approximately 1 million deaths in 2015. Three-quarters of these deaths could be prevented with current, cost-effective interventions. Across 184 countries, the rate of preterm birth ranges from 5% to 18% of babies born⁴. A study conducted in Nepal found that there were total 2708 deliveries during the study period, out of which teenage pregnancy was 264 (9.7%). There were 69 (26.1%) teenage mothers of age 16 to 17 years, 195(73.9%) of age group 18 to 19 years with caesarean delivery (10.2%) and preterm delivery were (3.0%)⁵.

Early childbearing is associated with various health risks for both mother and child. In this study 53.12% teenage pregnancies were associated with complications. The major maternal complications were Preterm labour 27.45%, Hypertensive Disorders of Pregnancy 20.17%, Premature Rupture of Membranes 18.21%, Abortion 14.57%, Anemia (8.12%). Low Birth Weight 16.86%, preterm births 16% and stillbirths 5% were major adverse fetal outcomes³. Therefore the study was intended to identify the outcomes of the teenage pregnancy in Western Region of Nepal and assess the relationship between teenage pregnancy and its outcomes.

II. Methods and Materials

A retrospective study was conducted in the Western Regional Hospital, Pokhara, Kaskidistrict of Nepal. This is the 350 bedded hospital which provides maternal child health services as a referral center for western region of Nepal. Data was retrieved from the hospital records between the periods of March to August 2016. There were total 4,297 deliveries occurred in that particular period of time and all teenage mothers among them were taken as samples. Before collecting data all the administrative procedure with written permission was received from respected hospital. Collected data was classified with the objective to identify the outcomes of the teenage pregnancy in Western Region of Nepal. Analysis and interpretation was done using descriptive as well as inferential statistics through computer program SPSS version 23 and presented in tables.

III. Results

3.1 Socio-demographic Characteristics of Teenage Mothers

The incidence of teenage pregnancy was 13.14%. (565 out of 4297 deliveries). About three fourth of the mothers (78.1%) were from age group of 18-19 years and the least 0.8% was from age group of 15 years and less. The mean age of the participants was 18.1±0.93 years. Among these mothers, 34.9 percent were Dalit ethnic group, considered as underprivileged group in Nepal, most (of the mothers 95.6%) were Hindu and more than half of the mothers (65.5 %) reside in rural area. Most of mothers (88.8%) were primigravidae and 11.2 % were multiparous. Detail illustration of socio-demographic characteristics of teenage mothers is presented in Table 1.

3.2 Outcome of Teenage Pregnancy in Mothers

Results disclosed that there was the occurrence of premature onset of labour (< 37 weeks of gestation) in 11.5% of the mothers. In some of the mothers, the mode of the delivery was caesarean section (13.3 %) and 2.1% vacuum delivery. It also revealed that obstructed labour (28.3%) was the highest complication seen among the teenage mothers followed by oligohydramnios (15.2%), postpartum haemorrhage (14.1%) and eclampsia (3.3%). Detail illustration are presented in Table 2 and 4.

3.3 Outcome of Teenage Pregnancy in Newborns

More than half (52.2%) were born female child which resembles the national population. The birth weight of the child is also very important to survive so the finding of the study shows that 18.3% had low birth weight (16.5%) low birth weight and 1.8% Very low birth weight. The findings of the present study also displayed that 7.6% of the newborns had low Apgar score. Among newborns, there were birth asphyxia (12.0%) most significantly, intra-uterine fetal death (4.3%) and stillbirth (2.2%). Blood loss is one of the mother's critical conditions during labour which was 1.6% among teenage mothers. Detail explanation is given in table 3 and 4.

3.4 Relationship between the Teenage Pregnancy and Maternal and Fetal Outcome

The analysis of association between the group of teenage pregnancy and maternal and fetal outcomes found that there is a significant association between teenage pregnancy and maternal outcomes ($p < 0.05$). The detail is shown in table 5.

3.5 Relationship between the Teenage Pregnancy and other selected Variables

The results shows that there is significant association between teen age and maternal morbidities and postpartum haemorrhage ($p < 0.05$). There is no significant association between other variables as the p value is more than 0.05 level of significance. Results is demonstrated in table 6.

Table 1: Socio-demographic Information of the Teenage Mothersn =565

Characteristics	Frequency	Percent
1. Age group		
i. 15 years and less	5	0.8
ii. 16 -17	119	21.1
iii. 18-19	441	78.1
*Mean Age and SD 18.15±0.9323		
2. Ethnicity		
i. Brahmin/Chhetri	129	22.8
ii. Janjati	183	32.4
iii. Dalit	197	34.9
iv. Others	56	9.9
3. Religion		
i. Hindu	540	95.6
ii. Buddhist	14	2.5
iii. Chritian	7	1.2
iv. Muslim	4	0.7
4. Place of Residency		
i. Urban	198	35.0
ii. Rural	367	65.0
5. Parity		
i. Primiparous	502	88.8
ii. Multiparous	63	11.2

Table 2Obstetric History current pregnancy and labour of the Mothersn =565

Characteristics	Frequency	Percent
1. Onset of labour		
i. Premature labour (37 weeks and prior)	65	11.5
ii. Term delivery (After 37 weeks)	500	88.5
2. Mode of delivery		
i. Spontaneous vaginal delivery	478	84.6
ii. Vacuum delivery	12	2.1
iii. Caesarean section	75	13.3

Table 3: Outcomes of the Pregnancy among Teenage Mothersn =565

Characteristics	Frequency	Percent
1. Gender		
i. Female	295	52.2
ii. Male	270	47.8
2. Weight of the newborn		
i. Very low birth weight(<1500gm)	10	1.8
ii. Low birth weight(1500-2499gm)	93	16.5
iii. Normal birth weight(>2500gm)	462	81.7
3. APGAR Score		
i. Normal (7-10)	522	92.4
ii. Low (<6)	43	7.6
4. Blood loss during labour		
i. Normal	556	98.4
ii. PPH	9	1.6

Table 4: Complications during pregnancy and labour in Mother and Newbornn =92

Characteristic	Number	Percent
To Mother		
i. Post Partum Hemorrhage	13	14.1
ii. Oligohydramnios	14	15.2
iii. Prolonged labour	14	15.2
iv. Obstructed labour	26	28.3
v. Retained placenta	4	4.3
vi. Eclampsia	3	3.3
vii. Jaundice	1	1.1
To Baby		
i. Birth Asphyxia	11	12.0
ii. Intra uterine fetal death(IUFD)	4	4.3

iii. Still birth	2	2.2
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Table 5: Association between teenage pregnancy and maternal and newborn outcomen = 565

Variables	Frequency of Age Group			χ ² Value	P Value
	15yrs and less	16-17 yrs	18-19yrs		
Maternal outcomes					
i. Obstructed labour	0	4		59.48	.000* (Highly Sig)
ii. Prolonged labour	0	3	22		
iii. Oligohydramnios	1	2	11		
iv. Retained placenta	0	0	11		
v. Eclampsia	1	0	4		
vi. Jaundice	0	1	2		
To Baby					
i. Birth Asphyxia	0	5	6	0.612	0.736 (Not Sig)
ii. Intra uterine fetal death(IUFD)	0	1	3		
iii. Still birth	0	1	1		

*(P<0.005)

Table 6: Association between teenage pregnancy and other selected variables

Variables	Frequency of Age Group			χ ² Value	P value
	15yrs and less	16-17 yrs	18-19yrs		
1. Week of Gestation	1	15	49	.563	.755
i. Preterm <37 weeks	4	104	392		
ii. Normal>37 weeks				5.295	.258
2. Type of Delivery	3	106	369		
i. Normal	0	2	10	1.743	.783
ii. Vacuum	2	11	62		
iii. CS	0	3	7	.612	.736
3. Birth weight of Newborn	1	23	68		
i. Very low	4	93	366	10.965	.004*
ii. Low	5	111	406		
iii. Normal	0	8	35	.612	.736
4. Apgar Score	4	117	435		
i. Normal(7-10)	1	2	6	10.965	.004*
ii. Less than 6					
5. Blood loss during labour					
i. Normal				.612	.736
ii. PPH					

*(<0.005)

IV. Discussion

Teenage pregnancy, also called adolescent pregnancy is pregnancy in the maternal age 19 years or even younger. This not only brings health risk to the physical health to the women and the baby but also life-threatening consequences in terms of sexual and reproductive health.

This study was conducted among 565 teenage mothers with the objective to identify the incidence and outcomes of teenage pregnancy. The findings has revealed the incidence 13.14 % (131.48 per 1000 live births) of teenage pregnancy within six months period which is similar to the NDHS 2016 findings (17%) with the findings of NDHS 2016 and the study findings shows 0.8% under 15 teenage mothers which also similar to NDHS 2016 the teenage under 15⁶.

Mean age of the teenage mothers was 18.15±0.9323 years which is similar (18.15±0.90 years) to the study conducted by Yadav et.al⁷. According to the findings of the study 34.9% teenage mothers belong to Dalit ethnic group which is contrast to a study conducted in Nepal, 41.5% ethnic group from Brahmin and chhetri⁷.

More than half or the teenage mothers(65.0%) live in rural part while a study conducted in South India reveals that almost all (98%) of them were from rural areas⁸.

Findings of the study demonstrates that 11.2 % mothers were multigravida which is akin to a study conducted by Yadav et.al (8.1%)⁷. Preterm labour is one of the issues with Teenage pregnancy as the study spectacles that 11.5% mother had preterm delivery. Among those teenage mothers having preterm labour, almost half (43.2%) were less than 17 years which is dissimilar to a study conducted by Kumar A, Singh T, Basu S, Pandey S, Bhargav V(24.3%)⁹. It was also illustrated that 13.3% had to undergo caesarean section and similar finding has presented by Sulaiman et. al⁹. The result of the study has displayed that 18.3% teenage mother had delivered low birth weight child and this is supported by a study conducted by Sulaiman et. Al¹⁰ and Yasmin⁶. It was found that normal delivery was the common mode of delivery in teenage women(84.6%) which is furthermore supported by a study conducted by Pun and Chauhan¹¹. And the low Apgar score during 5 minutes of birth was 7.6%

Regarding outcomes of teenage pregnancy to the mothers, most of them suffered from obstructed labour(28.3 %) followed by prolonged labour (15.2%) and oligohydramnios (15.2%) whereas a study conducted by Pun and Chauhan has identified antepartum and the postpartum haemorrhage as leading complications among teenage mothers¹¹. Regarding complications in newborns, the present study reveals birth asphyxia (12.0%) as a main complication which is similar to the finding in a study conducted by Kumar et.al⁸. Intra uterine fetal death (IUFD) 4.3% and stillbirth (2.2%) are also found in the present study and parallel finding has revealed a study conducted in India^{6,7}.

The study illustrated that there is a significant association between the teenage pregnancy and the maternal morbidity as the p value is less than 0.05 level of significance. But there is no association between the teenage pregnancy and newborn health. In contrast to present study there were association between teenage pregnancy and week of gestation, birth asphyxia, stillbirth, and low birth weight^{7,8}.

V. Conclusion

The findings of the study concluded that teenage pregnant mothers face different maternal and newborn complications during pregnancy such as preterm labour, prolonged obstetric labour, postpartum haemorrhage, oligohydramnios, eclampsia, among mothers and low birth weight, birth asphyxia, IUFD and stillbirth to the newborns. There is significant association between teenage pregnancy and maternal complications. Therefore awareness program could be helpful to reduce the teenage marriage then pregnancy to reduce the those complications.

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