



Burden of teenage pregnancies in Terai area of eastern region of Nepal

Sah RB,¹ Regmi MC², Subedi L³, Shah U⁴, Jha N⁵

1- Associate Professor, 3- Senior Instructor. 5- Professor, School of Public Health and Community Medicine, BP Koirala Institute of Health Sciences, Dharan, Nepal. 2- Associate Professor, Dept. of Gynecology, BPKIHS, Dharan, Nepal. 4- MSc student, Dept. of Microbiology, Sunsari Technical College PVT. LTD, Dharan

Submission Date: 24-08-2014, Acceptance Date: 27-08-2014, Publication Date: 31-10-2014

How to cite this article:

Vancouver/ICMJE Style

Sah RB, Regmi MC, Subedi L, Shah U, Jha N. Burden of teenage pregnancies in Terai area of eastern region of Nepal. *Int J Res Health Sci* [Internet]. 2014 Oct 31;2(4):947-52. Available from <http://www.ijrhs.com/issues.php?val=Volume2&iss=Issue4>

Harvard style

Sah, R.B., Regmi, M.C., Subedi, L., Shah, U., Jha, N. Burden of teenage pregnancies in Terai area of eastern region of Nepal. *Int J Res Health Sci*. [Online] 2(4). p.947-52 Available from: <http://www.ijrhs.com/issues.php?val=Volume2&iss=Issue4>

Corresponding Author:

Dr Ram Bilakshan Sah, Associate Professor, School of Public Health & Community Medicine, B P Koirala Institute of Health Sciences, Dharan, Nepal. Email: bilaksah@yahoo.com

Abstract:

Background: South Asia has a large proportion of young people in the world and teenage pregnancy has emerged as one of the major public health problem among them and bearing serious social and medical implications relating to maternal and child health. **Objectives:** To find out the incidence of teenage pregnancy and its impact on birth outcome. **Methods:** A cross-sectional study was conducted among the residents of Rangeli Village Development Committees (VDC) in the Morang District with 300 households as respondents. Semi-structured questionnaire was used and face to face interview was conducted for data collection. Chi-square test was applied to find out the association between sociodemographic characteristics and outcome variable for birth outcome and age first pregnancy. **Results:** About 61.7% of respondents were pregnant before 19 years of age. Women belonging marginalized community (Dalit and Janajati) was more likely to have teenage pregnancy compared to women with other ethnic groups ($P < 0.001$). The women with SLC and higher education was less likely to have teenage pregnancy (21.4%) compared to women with below SLC (60%) and illiterate (78.5%). Furthermore, economic variable shows stronger association with teenage pregnancies ($p < 0.001$). Fetal complication was significantly higher among teenage pregnancy (80%) than women with 19 years and above (20%). The proportion of low birth weight (< 2.5 kg) babies was also significantly higher in women with teenage pregnancy (80%) than women with 19 years and above (20%). **Conclusion:** Teenage pregnancy is still a rampant and important public health problem in Nepal with unfavorable neonatal outcome and needs to be tackled on a priority basis.

Key words: Birth outcome; Nepal; Socio-economic status; Terai Area; Teenage pregnancies

Introduction:

Teenage pregnancy is a public health concern both in developed and developing world [1]. Globally 15 million women under the age of 20 give birth, representing up to one-fifth of all births [2] and

529,000 women die due to pregnancy and child birth related complication every year [3]. The risk of death due to pregnancy related causes is double among women aged 15-19 compared to women in their twenties [4]. Young women are also at risk of unwanted pregnancies, sexually transmitted

infections (STIs) and unsatisfactory or coerced early sexual relationships [5].

In the developing world, one-third to one-half of women become mothers before the age of 20 and pregnancy related complications have become the leading causes of death among them [6]. South Asian countries (India, Pakistan, Sri Lanka, Nepal, Maldives, Bhutan and Bangladesh) have high proportions of teenage pregnancies, since early marriage is common and there is a social expectation to have a child soon after marriage [7]. 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 [8].

Within South Asia, the recorded teenage pregnancy rate is highest in Bangladesh 35% followed by Nepal 21% and India 21% [9]. Teenage pregnancy can have significant effect on the level of education of women, their employment opportunities and marital stability and increases their economic and social dependency on family and neighbours [10]. Therefore, this study was designed to find out the incidence of teenage pregnancy and its impact on birth outcome.

Material and Methods

A cross-sectional study was conducted from 1st March to 14th March, 2014 among the residents of Rangeli Village Development Committees (VDC) in the Morang District of Eastern Nepal. There were 20 medical students who helped for this study for two weeks. The baseline survey revealed that the prevalence of teenage pregnancy was 25% (NFHS in Bihar, India in 2007) [11], more than that 28.5% (Grover N et al in Belgaum, Karnataka in 2000) [12] and highest in Kathmandu, Nepal 29.5% (Pun KD et al in Nepal in 2011) [13]. So taking lower value 25% of prevalence of teenage pregnancy, sample size was calculated at 95% CI & 80% powers then it become 300 women. All the participants aged 15 to 45 years from the selected households were included in the study. There are 9 wards in Rangeli VDC. The nine wards, the ward number 1, 2, 3 and 4 was randomly selected by lottery method. The list of households of these 4 wards was prepared and equal number of households (75) from each ward was selected on the basis of simple random sampling.

The confidentiality and privacy of the study was maintained; name of the individuals or participating group was not disclose after the study. Face to face interview was conducted using semi

structured questionnaire for this study. A written permission was taken from concerned authority and the participants of the study. Those families which were available after three visits and willing to give written consent were included in the study.

The collected data was entered in MS Excel 2000. The analysis was done by using statistical software SPSS (Statistical Package for Social Science) 17.0 version. Chi-square test was applied to find out the association between sociodemographic characteristics and outcome variable for birth outcome and age first pregnancy. The probability of occurrence by chance is significant if $P < 0.05$ with 95% Confidence Interval.

Results

Table I: Distribution of study population by different sociodemographic variables

Characteristics	Frequency	Percent
Age of 1 st pregnancy		
Below 19 years	185	61.7
19 years & above	115	38.3
Religion		
Hindu	293	97.7
Others (Muslim, Christian)	7	2.3
Ethnicity		
Brahmin/Chhetri	35	11.7
Kirati	2	0.7
Janajati	147	49.0
Dalit	11	3.7
Terai Caste	105	35.0
Education of wife		
Illiterate	144	48.0
Below SLC	100	33.3
Above SLC	56	18.7
Occupation of wife		
Service	11	3.7
Business	12	4.0
Farmer	7	2.3
Housewife	270	90.0
Education of husband		
Illiterate	72	24.0
Below SLC	135	45.0
Above SLC	93	31.0
Occupation of husband		

Service	40	13.3
Business	130	43.3
Farmer	58	19.3
Others (Abroad, labor, unemployed)	72	24.0
Economic status		
Below poverty line(< 1.25 US\$)	123	41.0
Above poverty line (≥ 1.25 US \$)	177	59.0
Total	300	100.00

Table I shows about sixty two percent of women were pregnant at below 19 years of age (Teenage pregnancy). Study population showed high level of Janajati (49%) and Terai caste (35%) followed by Brahmin/Chhetri (11.7%), Dalit (3.7%) and Kirati ethnic group (0.7%). Regarding education of wife, almost nineteen percent of the women had completed SLC and higher education, thirty three percent had below SLC and forty eight percent were still illiterate.

Table II: Association between sociodemographic characteristics with age of 1st pregnancy

Characteristics	Below 19 years	19 years & above	Total	P- value
Religion				
Hindu	179 (61.1)	114 (38.9)	293	0.185
Others (Muslim, Christian)	6 (85.7)	1 (14.3)	7	
Ethnicity				
Brahmin/ Chhetri	4 (11.4)	31 (88.6)	35	<0.001
Kirati	0 (0.0)	2 (100.0)	2	
Janajati	104 (70.7)	43 (29.30)	147	
Dalit	9 (81.8)	2 (18.2)	11	
Terai caste	68 (64.8)	37 (35.2)	105	
Education of wife				
Illiterate	113 (78.5)	31 (21.5)	144	<0.001
Below SLC	60 (60.0)	40 (40.0)	100	
SLC and above	12 (21.4)	44 (78.6)	56	
Occupation of wife				0.087
Service	3 (27.3)	8 (72.7)	11	
Business	9 (75.0)	3 (25.0)	12	
Farmer	4 (57.1)	3 (42.9)	7	
Housewife	169 (62.6)	101 (37.4)	270	
Education of husband				
Illiterate	57 (79.2)	15 (20.8)	72	<0.001
Below SLC	100 (74.1)	35 (25.9)	135	
SLC and above	28 (30.1)	65 (69.9)	93	
Occupation of husband				
Service	9 (22.5)	31 (77.5)	40	<0.001
Business	83 (63.8)	47 (36.2)	130	
Farmer	41 (70.7)	17 (29.3)	58	
Others (Abroad, labor, unemployed)	52 (72.2)	20 (27.8)	72	
Economic status				
Below poverty line(<1.25 US\$)	99 (80.5)	24 (19.5)	123	<0.001
Above poverty line (≥1.25 US \$)	86 (48.6)	91 (51.4)	177	

Total	185 (61.7)	115 (38.3)	300	
--------------	-------------------	-------------------	------------	--

Table II shows that women with Dalit and Janajati was more likely to have teenage pregnancy compared to women with other ethnic groups ($P<0.001$). The relationship between teenage pregnancy and highest education level of women shows that the teenage pregnancies decreases as education level increases ($p<0.001$). Furthermore, economic variable shows stronger association with teenage pregnancies ($p<0.001$).

Table III: Association between birth outcome with age of 1st pregnancy (N=300)

Characteristics	Age of 1 st pregnancy		Total	P-value
	<19 years	≥19 years		
Outcome of 1 st pregnancy				
Live	92 (47.4)	102 (52.6)	194	<0.001
Others (Abortion, still birth)	22 (84.6)	4 (15.4)	26	
Presently pregnant	71 (88.8)	9 (11.2)	80	
Fetal complications (n=194)				
Yes	124 (80.0)	31 (20.0)	155	<0.001
No	10 (25.6)	29 (74.4)	39	
Birth weight of 1 st baby (n=194)				
<2.5 kg	16 (80.0)	4 (20.0)	20	<0.001
2.5-3.5 kg	114 (73.1)	42 (26.9)	156	
>3.5 kg	4 (22.2)	14 (77.8)	18	

Fetal complications including birth asphyxia, jaundice, febrile illness and congenital malformations was also higher among them with teenage pregnancy ($p<0.001$). The proportion of low birth weight (<2.5 kg) babies was higher in women with early age pregnancy ($p<0.001$) (Table 3).

Discussion

Worldwide 13 million births each year occur to girls younger than 19 years. The incidence of teenage pregnancies varies dramatically between the different countries. Approximately 90% of the teenage births occur in developing countries [14]. Teenage pregnancies are considered problematic because complications from pregnancy and childbirth are the leading causes of death in teenage girls aging between 15 and 19 years in developing countries. It is estimated that 70,000 female teenagers die each year because they are pregnant before they are physically mature enough for successful motherhood [15]. Therefore, teenage pregnancies and births are considered as risky.

This study showed the incidence of teenage pregnancy (61.7%) which was higher than the study conducted by Kayastha et al in Nepal in 2012 (9.7%) [16]. Similarly the incidence of teenage pregnancy in Sri Lanka and India are respectively 8% [17] and 21% [9] which were also lower than our study. A recent

study in Rajshahi Bangladesh reported that 50% of the total population gives first birth before the age of 19 years [18].

The relationship between teenage pregnancy and highest education level of women showed that the teenage pregnancies decreases as education level increases ($p<0.001$). NDHS (2011) also showed that women with SLC or higher education on average begin sexual intercourse four years later than those with no education [19]. Similarly, fertility is also inversely proportional to education level i.e. 3.7 births among those with no education and 1.7 births among women with SLC or higher [19]. Higher educational attainment, also results in the greater use of Sexual and Reproductive Health (SRH) services, awareness levels. It develops self confidence and decision making power in adolescent girls and helping to delay sexual activities and age of marriages. Educated women can plan for the future, use contraceptives properly, and develop self-esteem [20].

Economic variable showed stronger association with teenage pregnancies ($p < 0.001$). One earlier study has shown that significant differences in the socioeconomic status between teenage mothers and older mothers exist in Nepal as well [21]. It is often argued that the adverse reproductive outcome in teenage pregnancy is due to the social, economic and behavioral factors rather the biological effect of young age [22].

The incidence of still birth and abortion was 84.6% among teenage pregnancies. Several researchers have also reported higher incidence of still births and abortion among teenage pregnancies [23, 24]. A study conducted by Rahman et al in Bangladesh which showed that more than 10.28 percent of all conceptions end with stillbirths or abortions [25]. Another study found that overall, 7.5 of all the reported pregnancies ended up in abortion or still birth [26].

This study showed fetal complications including birth asphyxia, jaundice, febrile illness and congenital malformations was also higher among them with teenage pregnancy ($p < 0.001$). Among the neonatal complication, newborn of adolescents had greater neonatal complication than from the young mothers [13]. Of the neonatal complications; neonatal deaths and birth asphyxia were significantly higher in the teenage group compared to the adult primigravida women possibly due to the more number of premature births [27].

The proportion of low birth weight (< 2.5 kg) babies was higher in women with early age pregnancy ($p < 0.001$). Many previous studies have shown similar findings [28-30]. It revealed that 28% of low birth weight was found to the mothers of 15-19 years age group [13]. Another study found that the number of low-birth weight babies was more in the case of teenage mothers (38.9%) compared to the adult mothers (30.4%) [27]. Though outcomes of adolescent pregnancy is adverse for fetus or newborn, there is no evidence found for major impairments of pregnancy outcomes such as preterm delivery, fetal growth restriction, LBW, fetal or perinatal death among teenage mothers [30].

Conclusion

The teenage pregnancy has become major public health problems in Nepal. Risk factors like lack of money and education level of men and women are positively associated with teenage pregnancy. The result of birth outcome showed that teenage pregnancy was not favorable condition for

baby outcome. The fetal complications and low birth weight was the common neonatal complication among adolescent group. So teenage pregnancy should be discouraged by increasing age at marriage for girls and providing better education facilities for them. Appropriate health service and sexual counseling for adolescents as well as family planning should be provided to prevent adolescent pregnancy.

Source of Funding: Nil

Conflict of Interest: None

Acknowledgements

We would like to thank to School of Public Health and Community Medicine for approval of our research work. We would like to acknowledge the 6th semester students of MBBS Batch of 2011 who helped us during the study period and participants of Rangeli VDC.

Authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors/editors/publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

References

1. Lawlor DA, Shaw M. Teenage pregnancy rates: high compared with where and when? *Journal of the Royal Society of Medicine* 2004; 97:121-123.
2. WHO. Maternal mortality ratios and rates: a tabulation of available information. World Health Organisation (3rd edition), Geneva, 1991.
3. WHO. Facts and figures from the World Health Report. World Health Organisation, Geneva. 2005; Available from: http://www.who.int/whr/2005/media_centre/facts_en.pdf, Accessed 18 July 2014.
4. Population Reference Bureau. The World's youth 2000. Population Reference Bureau, Washington DC. 2000; Available from: http://www.prb.org/pdf/Worlds_Youth_Eng.pdf, Accessed 18 July 2014.
5. Singh S, Darroch JE. Adolescent pregnancy and childbearing: levels and trends in developed countries. *Family Planning Perspectives* 2000; 32:14-23.
6. Viegas OA, Wiknsosastro G, Sahagun GH, Chaturachinda K, Ratnam SS. Safe childbirth needs

more than medical services. *World Health Forum* 1992; 13: 59-65.

7. Stone N, Ingham R, Simkhada P. Knowledge of sexual health issues among unmarried young people in Nepal. *Asia Pacific Population Journal* 2003; 18: 33-54.

8. Mehra S, Agrawal D. Adolescent health determinants for pregnancy and child health outcomes among the urban poor. *Indian Pediatrics* 2004; 41:137-45.

9. The World Bank. *Children and Youth*. The World Bank, Washington DC. 2004; Available from: <http://siteresources.worldbank.org/INTCY/Data/20333440/YIN-SA.Pdf>, Accessed 18 July 2014.

10. Kirby D, Coyle K. School-based programs to reduce sexual risk-taking behavior. *Children and Youth Services Review* 1998; 19: 415-436.

11. International Institute for Population Sciences. *National family health surveys, India. Key findings from NFHS-3*. Mumbai: International Institute for Population Sciences, 2007. Available from: <http://www.nfhsindia.Org/factsheet.html>, Accessed on 18 July 2014.

12. Grover N, Sandhu KK. Teenage Pregnancy: Too Much Too Soon. *South Asian Federation of Obstetrics and Gynecology* 2009; 1(3):41-43.

13. Pun KD, Chauhan M. Outcomes of Adolescent Pregnancy at Kathmandu University Hospital, Dhulikhel Hospital. *Kathmandu Univ Med J* 2011; 33 (1): 50-3.

14. Alan Guttmacher Institute. *Risks and realities of early childbearing*. Alan Guttmacher Institute 2000.

15. Mayor S. Pregnancy and childbirth are leading causes of death in teenage girls in developing countries. *BMJ* 2004; 328:1152.

16. Kayastha S, Pradhan A. Obstetric Outcome of Teenage Pregnancy. *NJOG* 2012; 7(2): 29-32.

17. Fernando D, Gunawardena N, Senarath U, Weerasinghe M, Galwaduge C, De Silva C. Prevalence, trends and district differentials in teenage pregnancies. *Journal of the college of community physicians of Sri Lanka* 2011; 16 (2): 21-30.

18. Akter S, Rahman M, Sultana P, Rahman JAMS. Adolescent motherhood in rural Rajshahi of Bangladesh. *J Population Demograph Inst* 2007; 13(1):47-59.

19. Nepal. Department of Health Services (2011). *Annual Report*. Ministry of Health and Population, Government of Nepal. [Online]. Available from: http://dohs.gov.np/sites/default/files/1/files/Annual_Report_2066_67.pdf (Accessed 18 July, 2014).

20. Acharya DR, Teijlingen ERV, Simkhada P. Opportunities and Challenges in school based sex and sexual health education in Nepal. *Kathmandu University Medical Journal* 2009; 7: 445-453.

21. Sharma AK, Verma K, Khatri S, Kannan AT. Pregnancy in adolescents: A Study of Risks and Outcome in Eastern Nepal. *Indian Pediatrics* 2001; 38: 1405-1409.

22. Hollingsworth DR, Felice M. Teenage Pregnancy: A multiracial sociologic problem. *Am J Obstet Gynecol* 1986; 155:741-6.

23. Ananadalakshmy PN, Buckshee K. Teenage pregnancy and its effect on maternal and child health-A hospital experience. *Indian J Med Sci* 1993; 47: 8-11.

24. Kushwaha KP, Rai AK, Rathi AK, Singh TD, Sirohi R. Pregnancies in adolescents: Fetal, neonatal and maternal outcome. *Indian Pediatr* 1993; 30: 501-505.

25. Rahman MM, Hasan M, Akter S, Sultana P. Adolescent Pregnancy Complication and Wastage in Bangladesh. *J Nep Paedr Soc* 2010; 30(3):147-153.

26. Magadi M. Poor Pregnancy Outcomes among Adolescents in South Nyanza Region of Kenya. Southampton, UK, Southampton Statistical Sciences Research Institute, 2004, 20pp. (S3RI Applications and Policy Working Papers, A04/04).

27. Mukhopadhyay P, Chaudhuri RN, Paul B. Hospital-based Perinatal Outcomes and Complications in Teenage Pregnancy in India. *Health Popul Nutr* 2010; 28 (5):494-500.

28. Fraser AM, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. *N Engl J Med* 1995; 332:1113-7.

29. Friede A, Baldwin W, Rhodes PH. Young Maternal age and infant mortality: the role of low birth weight. *Public Health Rep* 1987; 102:192-9.

30. Raatikainen K, Heiskanen N, Verkasalo PK, Heinonen S. Good outcome of teenage pregnancies in high quality maternity care. *Eur J Public Health* 2006; 16: 157-61.