

Original article:

A reterospetive study of maternal and fetal outcome of adolescent pregnancy in Kawthaung province, Myanmar

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Abstract:

Objectives : To study maternal and neonatal outcomes of adolescent pregnancies (< 19 years) and to compare the outcomes with pregnant women between 20 – 34 years. **Materials and Methods:** This retrospective comparative study was performed in No. (13), Military Hospital (100) Bedded from 1st November 2014 to 31st October 2015. The case records of all adolescent mothers who delivered in hospital were retrieved. The major complications and the outcome were compared between adolescent mothers and adults mothers (20 -34 years) who delivered in the same period. **Results:** During the study period there were 262 deliveries in our hospital, of which 64 (24.4%) were teenage mothers. The mean age of the adolescent mothers was 18.01 (± 0.95) and mean gestational period of adolescent mothers was 37.8 weeks (± 1.23), comparing to mean age of adult pregnancy was 27.45 (± 3.8) and the gestational period was 38.7 weeks (± 0.95). Adolescent mothers were significantly higher in inadequate AN visits (18.3% vs. 11.4%), Serology Positive at AN visit (16.7 % vs. 6.4 %), anemia (23% vs. 7.8%), PROM (26.7% vs. 15.1%), eclampsia (15% vs. 6.6%), emergency CS (31.7% vs. 18.7%), poor Apgar score (10% vs. 3 %) and low birth babies (11.6% vs. 3%). **Conclusions:** Pregnant teenagers are definitely at greater risk, requiring more attention and effective antenatal care for prevention and treatment of anemia, prematurity, IUGR and LBW. To prevent the adverse outcome, steps should be taken to avoid teenage pregnancies by creating public awareness and health education about reproductive health in Kawthaung province.

Keywords: Teenage pregnancy; obstetric outcome; perinatal outcome

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Introduction

WHO identifies adolescence (from ages 10 to 19 years) the period in human growth and development that occurs after childhood and before adulthood. It represents the critical transition period in the life and it is characterized by a tremendous pace in growth.²² The teenage population is about 1.2 billion; i.e., nearly one fifth of the world population and growing in number around the world especially in developing countries.

UNFPA revealed that 55 % of the global total of adolescents lived in Asia Pacific Region¹⁸. About 16 million women 15-19 years old give birth each year, about 11% of all births worldwide. About 95% of births of teenage pregnancy occur in low- and middle-income countries. Besides, the mortality rate of adolescent pregnancies is five times higher than adult pregnancies²⁰.

Adolescent period as well as the teenage is the transitional stages of physical, biological and psychological changes. Most of the adolescent mothers are psychologically and emotionally immature which can damage to infant bonding.⁽⁷⁾ Pregnancy in adolescent period can cause the too much stressful conditions and can lead to the common public health and social problems with the adverse medical consequences worldwide. Moreover, customs, traditions and poverty are the main factors contributing the teenage marriages in developing countries. The highest rate of child marriages are found in the low income counties such as Niger, Chad , Central African Republic, Bangladesh, South Sudan, and Malawi,¹⁹.

The incidence of teenage pregnancy varies greatly in developing and developed countries. According to WHO data²¹, there is about of teenage pregnancy was

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16/1000 population in 2014 in Myanmar. However, Kawthaung province is one of the border area of Thailand and Myanmar the factors such as social, economic, cultural and psychological contexts of women in Kawthaung province are relatively different with other areas of Myanmar. The prevalence of teenage pregnancy in Kawthaung province is obviously higher than other areas in Myanmar. Since studies addressing adolescent pregnancies are lacking in Myanmar, this study aims to compare the obstetrics and perinatal outcomes in teenage pregnancies (15 -19 years) and adolescent pregnancy with that of 20 to 34 years age group. No. (13) Military Hospital, (100) bedded is one of the biggest hospital in Thanintharyi Region, Southern part of Myanmar.

Material and methods
A retrospective comparative study carried out at the Obstetrics and Gynecology Unit of No. (13) Military Hospital, Kawthaung which reviewed the records of deliveries from 1st November 2014 to 31st October 2015. Pregnancy occurring gender 19th years of age at the time of delivery was taken as the adolescent pregnancy and all adolescent pregnancies delivered during the study period were taken as the cases. The reference group was pregnancies in the age group between 20 to 34 year and taken Maternal outcome measures baseline data such as maternal age, gestational period, presence of anemia (Hb% < 11 g/dl)

and regular AN visits were recorded. Moreover, the antepartum complications, intrapartum complications and postpartum complications were noted as the maternal outcome of delivery and neonatal outcome measures included birth weight, Apgar score, leading to admission to the neonatal care unit like respiratory distress syndrome, jaundice, neonatal sepsis, meconium aspiration syndrome and hypoglycemia were collected. At least four antenatal visits to AN clinics was taken as the regular AN visit. The pregnancies ended with the abortion, twin pregnancies, preexisting major medical and surgical illness were

Table (1) Baseline obstetrics characteristics of teenage mothers and adults mothers and their antepartum complications

		Teenage Pregnancy (15 - 19 Years) n (%)	Adults Pregnancy (20 - 34 Years) n (%)	χ^2 value	p - value	Odds Ratio
Age	Mean	18.01	27.45			
	SD	0.95	3.8			
Gestational Period	Mean	37.8	38.7			
	SD	1.23	0.95			
Gravidity		1 (1 - 2)	-6)			
Parity		0 (0 - 2)	0 (0 - 5)			
AN visit < 4 times		18 (30.0 %)	(11.4 %)	11.2	< 0.001	3.31
Anemia		14 (23.3 %)	13 (7.8 %)	10	< 0.001	3.58
PROM		16 (26.7 %)	(15.1 %)	3.9	< 0.05	2
PPROM		2 (3.3 %)	3 (1.8 %)		NS	
APH		2 (3.3 %)	2 (1.2 %)		NS	
Mild Eclampsia		9 (15 %)	11 (6.6 %)	3.8	< 0.05	2.4
Severe Eclampsia		2 (3.3 %)	2 (1.2 %)		NS	
Gestational Hypertension		2 (3.3 %)	4 (2.4 %)		NS	
Serology Positive at AN visit		10 (16.7 %)	10 (6.4 %)	6.1	< 0.05	3.1
Oligohydrominos		2 (3.3 %)	(1.8 %)		NS	
PolyHydrominos		1 (1.7 %)	(1.8 %)		NS	

NS = statistically not significant

excluded in this study. Statistically analyses were done with the SPSS 18.0 software. Univariate analyses of the variables are presented as frequencies, percentage, mean and standard deviations. Strength of associations between the categories variables were tested with Chi squared test (χ^2), odds ratios and statically considered statistically significant at $p < 0.05$.

Results

A total of 262 pregnant women enrolled in this study from 1st November 2014 to 31st October 2015. During this period, the numbers of adolescent pregnancies (15 -19 years) was 60 (24.4%).

Table (1) represents the baseline obstetrics data **adult mother**

Mode of Delivery	Teenage Pregnancy (15 - 19 Years) n (%)	Adults Pregnancy (20 - 34 Years) n (%)	χ^2 value	p - value	Odds Ratio
NSVD	27 (45 %)	50 (30 %)	4.3	< 0.05	1.8
Emergency LSCS	19 (31.7%)	31 (18.7%)	4.3	< 0.05	2
ELSCS	11 (18.3%)	56 (33.7%)		NS	
Instrumental Delivery	5 (8.3%)	28 (16.9%)		NS	
Vaginal Breech Delivery	1 (1.7%)	2 (1.2%)		NS	

NS = statistically not significant

Table (2) shows the mode of delivery of teenage and adult pregnancies. Among them, vaginal delivery is the commonest mode of delivery in both groups (45% and 30%). But the rate of emergency cesarean section was significantly higher in teenage pregnancies than

of all respondents in AN visits and antepartum complications. It can be clearly seen that nearly one third of teenage mothers are lack of regular AN visits and about 23% of them have the anemia problems during the gestational period. PROM is the commonest antepartum complication in both groups (23.3% vs 7.8%, $p = < 0.001$,) which is followed by serology positive result (16.7% vs 6.4%) and mild eclampsia(15% vs 6.6%) and these results were the second most common problems in teenage groups compare to adult pregnancies.

Table (2); Mode of delivery of teenage mother and

adult pregnancies (31.7% vs. 18.7%, $p = < 0.05$). Contrary to this results, the elective cesarean section and instrumental delivery are significantly higher in adult's pregnancy (33.7% and 16.9%).

Table (3); Indications for cesarean section

Indication for cesarean section	Teenage Pregnancy (15 - 19 Years) n (%)	Adults Pregnancy (20 - 34 Years) n (%)	χ^2 value	p - value	Odds Ratio
Short stature	9 (15.0%)	7 (4.2%)	7.7	<0.001	4.0
High Head at term	10(16.7%)	11 (6.6%)	5.2	< 0.02	2.8
PPROM	2(3.3%)	6 (3.6%)		NS	
Fail progress labor	7 (11.7%)	7 (4.2%)	4.2	< 0.05	3.0
Fetal distress	7 (11.7%)	7 (4.2%)	4.2	< 0.05	3.0
Breech	4 (6.7%)	11 (6.6%)		NS	
Previous LSCS Scar	5 (8.3%)	14 (8.4%)		NS	
Inefficient maternal effort	-	7 (4.2%)		NS	

NS = statistically not significant

Table (3) shows the indications for cesarean section short stature, high head at term and CPD are the commonest indication among teenage pregnancies (16.7%vs 15%, $p = < 0.05$). Conversely, the previous

LSCS scar is the highest rate in adult pregnancy (8.4%). Other indications did not exhibited significantly between these two groups.

Table (4); postpartum complications between teenage pregnancy and adult pregnancy

Postpartum complications	Teenage Pregnancy	Adults Pregnancy	χ^2 value	p - value	Odds Ratio
	(15 - 19 Years)	(20 - 34 Years)			
	n (%)	n (%)			
PPH	2 (3.3%)	3 (1.8%)	NS	0.49	
Uterine Atony	-	-			
Wound Disruption	-	-			
Perineal Tear	-	-			
Perinatal Hematoma	-	-			
Maternal Death	-	-			

NS = statistically not significant

Table (5); Neonatal Outcome of teenage mother and adults mothers

		Teenage Pregnancy	Adults Pregnancy	χ^2 value	p - value	Odds Ratio
		(15 - 19 Years)	(20 - 34 Years)			
		n (%)	n (%)			
Birth weight (lb)	Mean	6.1	6.61			
	SD	1.75	1.02			
Body Weight < 2500 g		7 (11.6%)	5 (3.0%)	6.5	< 0.001	4.2
APGAR Score		6 (10 %)	5 (3.0%)	4.6	< 0.001	3.5
IUGR		1 (0.6%)	-	-	-	-
Still Birth		1 (0.6%)	-	-	-	-
Congenital Anomalies		-	-	-	-	-
Respiratory Distress Syndrome		-	-	-	-	-
Neonatal Jaundice		3 (5.0%)	1 (0.6%)	-	-	-

NS = Statistically not significant

It can be said that there is no postpartum complications in both groups and the occurrence of PPH can be neglectable in both groups. Regarding to the neonatal outcome of teenage mothers and adult mothers. Although the mean birth weight of newborn babies are not quite different between the teenage mothers and adults mothers, low birth weight babies were four time higher in teenage mothers (11.6% vs. 3%, $p < 0.001$). Others neonatal outcomes are not significant in this study.

Discussion

In this study, the mean age of the adolescent mothers was 18.01 years which was significantly lower than the adult mothers; 27.45 years. According to this, it can be said that the adverse maternal and fetal outcomes were more likely to occur in adolescent mothers. The rate of teenage delivery was obviously higher in this study (24%) which was remarkable higher than rate of teenage pregnancy in Myanmar

and it was more than double that in rate of teenage pregnancies in Sub-Saharan Africa¹⁸. Moreover, this result was significantly higher than those of Ekachai Kovavisarach et al¹⁰ which accounted (12.29%) which was conducted in neighboring country, Thailand. It might be due to early age of marriage, lack of knowledge and some factors such as social, economic, and cultural contexts influenced on the teenage women in Kawthaung province.

In general, the teenage pregnancies in Myanmar have nearly 6.7% risks of death during the perinatal period⁶. The majority of teenage mothers in Kawthaung province have the anemia problem and irregular ANC visits which reflected less responsibility for maternal care which can cause the higher rate of obstetrics complications and adverse neonatal outcomes among them like many international studies^{12,14,11}. Furthermore, the high proportion of anemia might be attributed to the fact that teenage pregnant women

were usually uneducated background and most of them came from low socio economic societies and under privileged families. It is true to say that they did not appreciate the important of regular AN visits and anemia and taking iron and folic acid supplement during the gestational period. Low hemoglobin concentrations increase the risk of adverse fetal outcomes such as low birth weight (LBW) and poor Apgar scores in adolescents pregnancies, so intensive care by their parents and families should be recommended for this group of pregnant women,^{3,6} Alio et al ² stated that paternal involvement is very importance in order to reduce the risk factors for adverse birth outcomes among teenage mothers,

In this study, the rate of cesarean section was higher in adult pregnancies compare with teenage pregnancies (33.7% vs. 18.5%). This may be attributed to the fact that older women delivered heavier babies than teenage girls; (6.1 lb. vs. 6.61) lb. It can be said that some factors such as gravidity and parity can influence some maternal outcome like cesarean section. Although the vaginal delivery was the major route of delivery in teenage mothers (45 %) in this study, however, teenage mothers had significantly higher emergency cesarean section (31.7%). This is because the indications for cesarean section reflected the non – reassuring for the maternal and fetal outcome of teenage mothers. Moreover, the high proportion of premature labor in the adolescent pregnancies result to higher number of preterm babies among them. However, the objective of present study was to compare the maternal and neonatal outcome between both groups; but not to find the risk factors of these adverse outcomes. So that these subjects were not divided into subgroups.

When classified as low birth weight, like many international studies^{8,9,13,17}, including the present study, reported that teenage mothers had considerably high rate of low birth weight than that in the adult mothers which are 11.6% and 3% respectively.

Furthermore, some pregnancy complications in teenage mother such as anemia, PROM, eclampsia, premature labor, and emergency cesarean section attributed to low birth weight babies among them. In order to reduce the risk factors of low birth weight babies among teenage pregnancies, the holistic

approaches such as health education, maternal nutrition, improvement in socio-economic indices, and increasing the quality and quantity of the antenatal care services are importance. More than one authors cited in the text and states that teenage mothers who receive good family and community support, timely quality antenatal care and deliver in the hospital, should expect similar obstetric outcome to that of their older peers,^{14, 15}

On the other hand, the intrapartum complications, postpartum complications and neonatal outcomes in this study were remarkable better than many similar studies because it might be effective intranatal care and postnatal care of Department of Obstetrics and Gynecology, No.(13), Military Hospital, (100) Bedded, Kawthaung province.

Amidst the poor social and educational contexts of teenage mothers, the adolescent pregnancy is strongly associated with the adverse maternal and fetal outcomes in Kawthaung province. These adverse outcome can be ameliorated by effective health education about the reproductive health care, providing the effective antenatal care and essential obstetrics care towards the adolescent women in Kawthaung province.

Conclusion

The rate of teenage pregnancy at No. (13), Military Hospital, Kawthaung from 1st November 2013 to 31st October 2014 was 24.4%. Teenage pregnancies pose complications that include anemia, preterm labor and low birth weight infants.

Limitations of the study

The main limitation of this study was that it was a hospital based study and it may not truly reflect the prevailing situation in a community. Another limitation of this study was that the adverse outcomes of teenage pregnancy could have been confounded by the different sociodemographic characteristics.

Disclosure

The authors declared no conflict of interest. No funding was received for this study.

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References

1. Abalos, E., Cuesta, C., Carroli, G., Qureshi, Z., Widmer, M., Vogel, J. P., Souza, J. P., Maternal, 2014. Pre-eclampsia, eclampsia and adverse maternal and perinatal outcomes: a secondary analysis of the World Health Organization Multicountry Survey on Maternal and Newborn Health. *BJOG*, 121 Suppl 1, 14-24.
2. Al Habashneh, R., Khader, Y. S., Jabali, O. A. & Alchalabi, H. 2013. Prediction of preterm and low birth weight delivery by maternal periodontal parameters: receiver operating characteristic (ROC) curve analysis. *Matern Child Health J*, 17, 299-306.
3. Alio, A. P., Mbah, A. K., Grunsten, R. A. & Salihu, H. M. 2011. Teenage pregnancy and the influence of paternal involvement on fetal outcomes. *J Pediatr Adolesc Gynecol*, 24, 404-9.
4. Alizadeh, L., Raoofi, A., Salehi, L. & Ramzi, M. 2014. Impact of maternal hemoglobin concentration on fetal outcomes in adolescent pregnant women. *Iran Red Crescent Med J*, 16, e19670.
5. Althabe, F., Moore, J. L., Gibbons, L., Berrueta, M., Goudar, S. S., Chomba, E., Derman, R. J., 2015. Adverse maternal and perinatal outcomes in adolescent pregnancies: The Global Network's Maternal Newborn Health Registry study. *Reprod Health*, 12 Suppl 2, S8.
6. Aye Aye Thein. 1995. *Obstetric Performance and Perinatal Outcome of Teenage Primigravidai in North Okkalapa General Hospital*. M.Med.Sc (O&G) MMedSc dissertation (unpublished), University of Medicine 2.
7. Bakacak, M., Avci, F., Ercan, O., Kostu, B., Serin, S., Kiran, G., Bostanci, M. S. & Bakacak, Z. 2015. The effect of maternal hemoglobin concentration on fetal birth weight according to trimesters. *J Matern Fetal Neonatal Med*, 28, 2106-10.
8. Barros, M. C., Mitsuhira, S. S., Chalem, E., Laranjeira, R. R. & Guinsburg, R. 2013. Depression during gestation in adolescent mothers interferes with neonatal neurobehavior. *Rev Bras Psiquiatr*; 35, 353-9.
9. Dahlui, M., Azahar, N., Oche, O. M. & Aziz, N. A. 2016. Risk factors for low birth weight in Nigeria: evidence from the 2013 Nigeria Demographic and Health Survey. *Glob Health Action*, 9, 28822.
10. Ekachai Kovavisarach, Supanan Chairaj, Kasorn Tosang, Suvanna Asavapiriyant & Uraivan Chotigeat 2010. Outcome of Teenage Pregnancy in Rajavithi Hospital. *J Med Assoc Thai* 93, 1.
11. Eren, E. C., Ekiz, A., Mumusoglu, S., Yildirim, D., Aydinler, B., Bestel, M. & Ark, H. C. 2015. Adverse perinatal outcomes of adolescent pregnancies in one center in Istanbul, Turkey. *Clin Exp Obstet Gynecol*, 42, 752-6.
12. Fatma Yousef Ziyu, Fatma Ahmad Matly, Ghazala Mahmoud Mehemd & Dofany., E. M. 2013. Relation between Prenatal care and Pregnancy Outcome at Benghazi. *Iran J Nurs Midwifery Res*, 18, 360-366.
13. Kaplanoglu, M., Bulbul, M., Konca, C., Kaplanoglu, D., Tabak, M. S. & Ata, B. 2015. Gynecologic age is an important risk factor for obstetric and perinatal outcomes in adolescent pregnancies. *Women Birth*, 28, e119-23.
14. Karabulut, A., Ozkan, S., Bozkurt, A. I., Karahan, T. & Kayan, S. 2013. Perinatal outcomes and risk factors in adolescent and advanced age pregnancies: comparison with normal reproductive age women. *J Obstet Gynaecol*, 33, 346-50.
15. Omole-Ohonsi, A. & Attah, R. A. 2010. Obstetric outcome of teenage pregnancy in Kano, North-Western Nigeria. *West Afr J Med*, 29, 318-22.
16. S Sulaiman, S Othman, N Razali & J Hassan, M. 2013. Obstetric and perinatal outcome in teenage pregnancies. *S Afr J OG* 19, 74.
17. Samar Rudra, Himadri Bal & Singh., S. 2013. A retrospective study of teenage pregnancy in a tertiary care hospital. *Int J Reprod Contracept Obstet Gynecol*, 2, 383-387.
18. UNFPA 2013. *Adolescent Pregnancy; A Review of the Evidence*, New York. WHO. 2013. *Child marriages* [Online]. Available: http://www.who.int/mediacentre/news/releases/2013/child_marriage_20130307/en/ [Accessed December 17 2015].
19. WHO. 2015a. *Adolescent pregnancy* [Online]. Available: http://www.who.int/maternal_child_adolescent/topics/maternal/adolescent_pregnancy/en/ [Accessed December 24 2015].
20. WHO 2015b. Myanmar Maternal and Perinatal Health Profile. Department of Maternal, Newborn, Child and Adolescent Health (MCA/WHO).
21. WHO. 2016. *Adolescent development* [Online]. Available: http://www.who.int/maternal_child_adolescent/topics/adolescence/dev/en/ [Accessed].