



## Conference Paper

# Outcome and Risk of Obstetric Complication in Teenage Pregnancy in Tertiary Center Hospital in Indonesia

Huthia Andriyana,<sup>1</sup> Merry Amelya,<sup>1</sup> Better Nababan,<sup>1</sup> and Eka Rusdianto<sup>2</sup>

<sup>1</sup>Faculty of Medicine, University of Indonesia

<sup>2</sup>Obstetrics and Gynaecology Department, Division of Reproduction Health RSUPN Dr. Ciptomangunkusumo, Jakarta Indonesia

## Abstract

**Background.** Teenage pregnancy is a worldwide problem bearing serious social and medical implications relating to maternal and child health. Teenage pregnancy can have serious physical consequences and they are likely to be unmarried and uneducated. The objective of the study was to evaluate risk factors associated with teenage pregnancy and compare the obstetric and fetal outcome. **Methods.** This is a retrospective study performed over a period of 2 years (January 1, 2013 to December 31, 2014) in Dr. Cipto Mangunkusumo Hospital as tertiary center and teaching hospital in Indonesia where data was retrieved from the hospital records. Three hundred and fifty randomly selected teenage mothers (aged 12-18) who had delivery within the period were compared with 350 randomly selected deliveries in older primigravid mother (19-39 years) over the same period. Variables of interest were the demographic characteristics of the women, their obstetric complications and the outcome. **Results.** There were a total of 5449 deliveries during the study period, out which 372 (6.8%) were teenagers. We compared 350 randomly selected teenage mothers (aged 12-18 years) with 350 randomly selected primigravid mothers (aged 19-39) over the same period. In teenage group, the mean of age was 17,3 years old, most of the teenage mother latest education were junior high school (78,3%), unemployed (55,1%), married < 6 month (40,8%), unintended pregnancy (56,6%), labor husband occupation (56%). The obstetrical complications of teenage mother were premature rupture of membrane (27,3%), preterm labor (20,9%), gestational hypertension, mild-severe preeclampsia (12,3%), intrauterine infection (10,3%), postterm pregnancy (5,7%), eclampsia (3,7%), fetal malpresentation (3,7%), labor dystocia (3,4%), HIV (0,9%) and condyloma (1,7%). Most of babies were delivered vaginally (61,3%) in gestational age under 36 weeks (57,7%) with babies birth weight under 2500 grams (51,7%). Most of teenage mother were having IUD as contraception (78,9%). **Conclusion.** Teenage pregnancy in Indonesia is concentrated among women with less education, who are unemployed, unmarried and with inadequate antenatal care and obstetric risks for poor pregnancy outcome.

**Keywords:** Teenage pregnancy, risk factor, maternal outcome, neonatal outcome

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## 1. Introduction

Teenage pregnancy is a social problem distributed worldwide and has serious consequences on maternal and child health, especially in developing countries. Teenage pregnancy is defined as gestation in women before having reached the full somatic development, and refers to the period between ages 10 and 19 years.

Pregnancy in the very young women is generally considered to be a high risk event because of the additional burden of reproduction on a body which has still to grow. Teenage pregnancies constitute major sociomedical and socioeconomic problems in developing countries and are becoming more prevalent in recent times. The emergence of this teenage problem has been attributed to various factors such as early marriage, social permissiveness, unmet needs for contraceptives, maternal deprivation, no sexual health education in school, pre-existing psychosocial problems and in the family and general non-functioning family unit could be mentioned among others.

Despite psychological trauma and labor pain, many medical complications related to teenage pregnancy and childbirth might occur. These medical risks are well documented in the international literature, and include an increased risk of preterm labor, increased risk of low birth weight, increased labor and delivery complications (preeclampsia, eclampsia, labor dystocia, obstetrical hemorrhage) and a higher chance of perinatal mortality. Pregnancies occurring "too early" extend a woman's reproductive life span and constitute a major risk to the survival and future health of both mother and child. Sexual transmitted disease also became a problem in teenage sexual health and these medical problems could also occur in addition to the risks of the pregnancy itself. The socio-economic consequences of teenage pregnancy include more unwanted pregnancies and out-of-wedlock children, greater marital instability, poor education, fewer assets and lower income later in life.

The aim of this study was to evaluate the rate of teenage delivery in a tertiary center hospital in Indonesia. Moreover, we investigated the association between maternal age, maternal education, marital status, maternal complications and postpartum contraception in a group of teenage women who received professional health care during their pregnancy and/or delivery.

## 2. Material and Methods

This study was conducted at the RSUPN Dr. Cipto Mangunkusumo Hospital over period of two years (January 1, 2013 to December 31, 2014) as tertiary center and university teaching hospital in Indonesia where complicated cases are referred for management. This is a cross-sectional study, observational type with two groups—cases and comparison—respectively. Data were collected from hospital records. This study groups consists of 350 randomly selected teenage mother aged 12–18 years that gave birth during the study period and control groups of 350 randomly selected adult primigravid mother aged 19–39 that gave birth over the same period.

Variables relating to the socio demographic characteristics of the women in the two groups, such as, mother's education and occupation, husband occupation, marital

status, marriage age, intended or unintended pregnancy, route of delivery, obstetric complications, gestational age, baby's birth weight and postpartum contraception method. Statistical analysis was performed with Statistical Package for Social Sciences (SPSS version 21.0) where nominal data were compared using chi square or Fisher test. A multivariate analysis was done to evaluate the risk of obstetric complication for teenage mothers compared to adult primigravid mothers. For a significance level  $\alpha = 0.05$ , we considered the existence of statistical significance when  $p < 0.05$ .

### 3. Result

There were a total of 5449 deliveries during the study period, which 372 deliveries (6,8%) were teenagers. The age of teenage patients ranged from 12-18 years with a mean age of ( $17.4 \pm 1.0$ ) years. Most of the teenage mother latest education were junior high school (78,3%) compared to higher education level in adult primigravid mothers (73,4% in senior high school and 22,9% in academy/university). Most teenage mothers were unemployed (55,1%), married < 6 month (40,8%), unintended pregnancy (56,6%), labor husband occupation (56%) compared with adult primigravid mother which is housewife (61,7%), married > 12 months (93,1%), intended pregnancy (94,6%), labor husband occupation (75,7%) (Table 1).

Most of teenage pregnancy (215 cases; 61,3%) were delivered vaginally, 124 cases (35,4%) were delivered by caesarean section while 11 cases (3,2%) had instrumental delivery compared to 188 cases (53,7%) adult primigravid mothers were delivered by caesarean section. Most of cases in teenage mothers were unbooked cases (313 cases; 89,4%). (Table 2).

The obstetrical complications of teenage mother were premature rupture of membrane (27,3%), preterm labor (20,9%), gestational hypertension, mild-severe preeclampsia (12,3%), intrauterine infection (10,3%), postterm pregnancy (5,7%), eclampsia (3,7%), fetal malpresentation (3,7%), labor dystocia (3,4%), HIV (0,9%) and condyloma (1,7%). These complications compared to non teenage mothers are statistically significant (Table 3). The risk of pregnancy complication in teenage mothers were preterm deliveries (OR 1.54 – 95% CI (1.152-2.071),  $p < 0.05$ ), eclampsia gravidae (OR OR 0.193 – 95% CI (0.054-0.686),  $p < 0.05$ ), intrauterine infection (OR 0.48 – 95% CI (0.245-0.777),  $p < 0.05$ ) compared to adult primigravid mothers.

There is significant difference in perinatal outcome between teenage mothers and adult primigravid mothers. Mean gestational age in teenage mothers was  $34 \pm 4.02$  weeks and  $36.1 \pm 4.01$  weeks in adult primigravid mothers ( $p < 0.05$ ). Mean baby's birth weight in teenage mothers was  $2340 \pm 692$  gram and  $2484.3 \pm 755$  weeks in adult primigravid mothers ( $p < 0.05$ ) (Table 4).

### 4. Discussion

The frequency of teenage pregnancy in Indonesia as a developing country is very high compared to other developed countries. The reasons for this difference could be

Characteristics	Adolescent Mothers n(%)	Adult Primigravida Mothers n(%)	p*
<b>Age (years) Med (min-max)</b>	18(12-18)	26 (19-39)	<b>0.000</b>
12-18	350 (100)	0	
19-25	0	164 (46,8)	
26-32	0	131 (37,4)	
33-39	0	55 (15,7)	
<b>Educational status</b>			<b>0.000</b>
Primary	76 (21,7)	0	
Secondary	274 (78,3)	13 (3,7)	
Tertiary	0	257 (73,4)	
Academy/University	0	80 (22,9)	
<b>Mother Occupation</b>			<b>0.000</b>
Unemployed	193 (55,1)	0	
Housewife	157 (44,9)	216 (61,7)	
Labour	0	69 (19,7)	
Employee	0	65 (18,6)	
<b>Marital Status</b>			<b>0.000</b>
Not Married	29 (8,3)	0	
Married	321 (91,7)	350 (100)	
<b>Marriage age</b>			<b>0.000</b>
Not married	29 (8,3)	0	
< 6 months	143(40,8)	5 (1,4)	
6 – 12 months	113 (32,3)	19 (5,4)	
> 12 months	65 (18,6)	326 (93,1)	
<b>Intend or Unintended</b>			<b>0.000</b>
Unintended pregnancy	198 (56,6)	19 (5,4)	
Intended pregnancy	152 (34,4)	331 (94,6)	
<b>Husband Occupation</b>			<b>0.000</b>
Without husband	29 (8,3)	0	
Unemployed	125 (35,7)	0	
Labour	196 (56)	265 (75,7)	
Employee	0	85 (24,3)	

\* Chi-Square test

TABLE 1: Characteristics comparisons between adolescent mothers (n = 350) and adult primigravida mothers (n = 350)

	Adolescent Mothers n(%)	Adult Primigravida Mothers n(%)	p*
<b>Route of Delivery</b>			<b>0.000</b>
Vaginal Delivery	215 (61,3)	153 (43,7)	
Instrumental Delivery	11 (3,2)	9 (2,6)	
Cesarean Section	124 (35,4)	188 (53,7)	
<b>Booked Case or Unbooked Case</b>			
Booked Case	37(10,6)	198 (56,6)	
Unbooked case	313 (89,4)	152 (43,4)	

\* Chi-Square test

TABLE 2: Route of delivery, booked or unbooked cases in adolescent mothers (n = 350) and adult primigravida mothers (n = 350).

Pregnancy Complications	Adolescent Mothers n(%)	Adult Primigravida Mothers n(%)	p*	OR	CI 95%	
					Lower	Upper
Without complications	17 (4,9)	34 (9,7)	0.264	1.429	0.764	2.672
Preterm	73 (20,9)	33 (9,4)	<b>0.004</b>	<b>1.545</b>	<b>1.152</b>	<b>2.071</b>
Premature rupture of membranes	96 (27,3)	94 (26,9)	0.108	0.761	0.545	1.062
Gestational Hypertension, Mild - Severe Preeclampsia	43 (12,3)	62 (17,7)	0.452	1.172	0.775	1.774
Eclampsia Gravidarum	13 (3,7)	3 (0,9)	<b>0.011</b>	<b>0.193</b>	<b>0.054</b>	<b>0.686</b>
Intrauterine infection	36 (10,3)	18 (5,1)	<b>0.005</b>	<b>0.437</b>	<b>0.245</b>	<b>0.777</b>
Dystocia	12 (3,4)	12 (3,4)	0.336	0.659	0.282	1.54
Malpresentation	13 (3,7)	21 (6)	0.459	1.307	0.643	2.656
Condyloma	5 (1,4)	0	0.999	0.000	0.000	0.000

\*Logistic regression

TABLE 3: Risk of pregnancy complications in adolescent mothers (n = 350) and adult primigravida mothers (n = 350).

Perinatal outcome	Adolescent Mothers n(%)	Adult Primigravida Mothers n(%)	p*
<b>Gesational age (wga)</b>			
mean ± SD	34 ± 4.02	36.1 ± 4.01	<b>0.001</b>
< 32 wga	68 (19,4)	39 (11,1)	
32-36 wga	134 (38,3)	122 (34,9)	
≥ 37 wga	148 (42,2)	189 (54)	
<b>Birth Weight (gram)</b>			
mean ± SD	2340 ± 692	2484.3 ± 755	<b>0.008</b>
< 2500 gram	181 (51,7)	141 (40,3)	
2500 – 3500 gram	159 (45,4)	193 (55,1)	
> 3500 gram	10 (2,9)	16 (4,6)	

TABLE 4: Perinatal outcome in adolescent mothers (n = 350) and adult primigravida mothers (n = 350).

cultural and religious norms. Many women in teen age were married due to cultural factors. Women who married after 17 years old is considered taboo for their family. And also low sexual education in school lead to unprotected sexual behavior resulting unintended pregnancy and sexual transmitted disease. Majority of them were married less than 6 months, unbooked case with poor antenatal care, lower educational status and unintended pregnancy. In the same study the limited knowledge of young women about antenatal care programs and the fear of HIV testing have been further obstacles to efficient antenatal care [1].

Pregnancy complications like preterm labor, eclampsia and intra uterine infection occurred more commonly in teenagers compared to adult primigravid mothers. There were also significant difference in the gestational age and baby's birth weight between teenage mothers and adult primigravid mothers. Several reasons for the high risk of pregnancy and low birth weight baby from adolescent mothers have been discussed in the scientific literature, among others anatomic immaturity and continued maternal growth which may represent biologic growth barriers for the fetus [2]. Moreover, adolescent mothers may represent a particularly disadvantaged risk group characterized

by low socioeconomic status, financial income and level of education, as was found from this study [3, 4].

Vaginal delivery was the major route of delivery in teenage mothers group (61,3%) compared to caesarean sections that was the major route of delivery in adult primigravid mothers (53,7%). Most of teenage pregnancy cases were unbooked case and came to our hospital in labor condition (active or second stage of labor) with several complications. This condition probably due to poor antenatal care and limited knowledge about pregnancy and labor process. This finding is similar to previous studies [5, 6].

In conclusion, teenage pregnancy in Indonesia is concentrated among women with less education, who are unemployed, unmarried and with inadequate antenatal care and obstetric risks for poor pregnancy outcome.

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