Prevalence of Repeat Pregnancy Including Pregnancy Outcome of Teenage Women

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ABSTRACT

Objective: To determine the prevalence and possible factors of repeat teenage pregnancy including their pregnancy outcomes compared to primi-gravida teenage pregnancy.

Methods: 1,684 medical records of teenage pregnancy delivered or received termination of pregnancy at Siriraj hospital from July 2009 to June 2011 were reviewed. The characteristics and pregnancy outcomes of primi- and multi-gravida teenage pregnancies were studied and compared between groups.

Results: The prevalence of repeat pregnancies among the study population was around 20% (338/1,684). Age of multi-gravida teenagers and their husbands were significantly higher than those of primi-gravida. Only 5% of primi-gravida and 25% of multi-gravida were documented as using contraception before getting pregnant ($p < 0.001$). Oral contraceptive was the most common method using in both groups. Multi-gravida teenagers were significantly diagnosed as anemia before delivery or termination of pregnancy ($p = 0.03$), although immediate pregnancy outcomes among the two groups were not significantly different. Before they were discharged from the hospital, less than half of them got immediate contraceptive methods especially long-acting reversible contraception.

Conclusion: The prevalence of repeat pregnancy among teenagers at Siriraj Hospital was approximately 20%. Lack of proper contraception might be the factor related to repeat pregnancy. Although immediate pregnancy outcomes among primi-and multi-gravida teenagers were not significantly different, long term outcomes of both teenage mothers and their children were still limited.

Keywords: Contraceptive methods; repeat pregnancy; teenage (Siriraj Med J 2017;69: 363-368)

INTRODUCTION

Teenage pregnancy has been a public concern globally which not only affects in health system, but is also associated with adverse socioeconomic and psychological consequences. Educational achievement and economic progress were impacted by loss of opportunity to return to school of teenage mothers.[1-2]

Ten percent of teenage births worldwide were from more than 14 million adolescent girls[3] and 6 million of those were from Southeast Asia.[4] Data from the Ministry of Public health (MOPH) of Thailand revealed the proportion of Thai teenage pregnancy between 2003 and 2013 were rising from 12.9% to 16.8%, respectively. The birth rate of adolescents (age between 15-19 years old) per 1000 women age was 51.2 in 2013, despite the fact that teenage pregnancy was one of the most important agendas in the health assembly.[5]

Many strategies to reduce teenage pregnancy have also been established, although no evidence has indicated that existing interventions were effective.[6] Consequently, repeat pregnancies in adolescents remain a public health concern in many countries such as South Africa and USA[7,8], although some scholars have proposed that not all adolescent births are harmful.[9,10] Repeat births among adolescents have an even higher risk of preterm birth, very low birth weight, stillbirths, and perinatal and neonatalmortality.[11]

These observations emphasize the importance of

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preventing a second pregnancy among adolescents.The survey study in Thailand by the Bureau of Reproductive Health of MOPH demonstrated that, the overall rate of repeat pregnancy in teenagers was12.5% and revealed the higher rate in late teenager (age of 19) that was equal to 21.1%. Additionally, this data did not include any abnormal pregnancy conditions such as abortion and ectopic pregnancy.[5]

There was evidence that sexually experienced teenage women who were provided with contraception without any charge and obtained knowledge about the benefits of long acting reversible contraceptive (LARC) methods had lower rates of pregnancy, abortion and delivery than the national rates.[12] Although the rate of contraceptive use among sexually experienced teenagers in Thailand was as high as 70-80%, the types and the continuation of contraception have not been documented and the rate of repeat pregnancy was still rising.[5]

The aims of this study were to determine the prevalence and possible factors of repeat pregnancy in teenagers including their pregnancy outcomes compared between primi-and multi-gravida pregnancies.

MATERIALS AND METHODS

After the approval of the study protocol by the Siriraj Institutional Review Board (Si 588/2012), the retrospective chart review was then performed to collect the data without the informed consent of participants obtained. Inclusion criteria included teenage pregnancy (maternal age <20 years old at the date of delivery) aborted or delivered at Department of Obstetrics and Gynecology, Faculty of Medicine Siriraj Hospital from July 2009 to June 2011. Exclusion criteria were incomplete medical records. Demographic data were obtained including gravida, parity and abortion, ages of the couples at date of delivery, education, occupation, and contraceptive method used before this pregnancy. The information of antenatal care including laboratory tests were also collected. Result of hematocrit within 2 months before delivery was recorded and anemia defined as hematocrit below 33%.

Prevalence and possible factors of repeat pregnancy were recorded. Pregnancy outcomes including gestational age and mode of delivery, maternal complications, neonatal outcome and complications as well as decision making on contraceptive method before discharge from the hospital were collected and finally compared between primi and multi- gravida teenage pregnancies.

Data were double entered into Epidata and transferred for statistical analysis using R program (version 3.0.0). Maternal characteristics and their pregnancy outcomes were presented as percentage, mean with standard deviation (SD) or median with inter-quartile range (IQR). Comparison of patient characteristics and pregnancy outcomes were analyzed using the Wilcoxon rank-sum test for continuous and the Pearson's Chi-square test or the Fisher's exact test for categorical variables.

RESULTS

1,684 medical records of teenage pregnancy were reviewed. Characteristics of this study's population were shown in Table 1. Of all 1,684 teenage pregnancies, 80% were primi-gravida whereas 20% were repeat pregnancy.

Comparison among primi and multi-gravida pregnancies, the age of multi-gravida teenagers and their husbands were significantly higher than those of primi-gravida. The educational level among these two groups was not statistically different whereas the significant difference (p value = 0.01) was shown on the occupational status as shown in Fig 1. Proportion of the students among primi-gravida teenager was higher than multi-gravida.

Only 5% (65/ 1346) of primi-gravida and 25% (85/338) of multi-gravida were documented as using contraception before pregnancy. Oral contraceptive pills (OCP) used before pregnancy was also the most common method in both groups while DMPA (Depot Medroxyprogesterone Acetate) was more popular in multi- gravida teenager (23.5% vs 1.5%) and emergency OCP was preferable in primi-gravida group (9.2% vs 1.2%). However, long-term methods of birth control, such as IUD or contraceptive implantation, were not mentioned in our populations. In addition, the percentage of antenatal care (ANC), gestational age of thefirst ANC, place and number of ANC visits were not different between groups. Finally, the anemic condition before delivery was significantly greater in multi-gravida pregnancy.

Table 2 showed immediate pregnancy outcomes which were not statistically significantly different between groups. Before they were discharged from the hospital, about half of them (936/ 1,682) received contraceptive methods despite the fact that all of them were given advice at the family planning clinic. Preference of method for contraception was statistically significantly different (p value < 0.001) among the two groups, although DMPA was still the most common method and was used by one third seen on both groups. Furthermore, long-acting reversible contraception, e.g. intrauterine device and contraceptive implantation, were rarely used in both groups particularly in primi-gravida (0.3% and 8%, respectively) as revealed in Fig 2.

TABLE 1. Bibliographic characteristics

	Total teenage pregnancy N = 1684, n (%)	Primi gravida N = 1346, n (%)	Multi gravida N = 338, n (%)	P- value*
Maternal Age (years)				< 0.001[a]
Median (IQR)	17 (16, 18)	17 (16,18)	18 (17,19)	
Husband age (years), N = 872				< 0.001[a]
Median (IQR)	20 (18, 24)	20 (18,23)	21 (19,25)	
Education, N = 589				0.07[b]
No education	13 (2.2)	11 (2.3)	2 (1.8)	
Primary school	119 (20.2)	90 (18.8)	29 (26.1)	
Secondary school	308 (52.3)	251 (52.5)	57 (51.4)	
High school	67 (11.4)	58 (12.1)	9 (8.1)	
Occupational school	77 (13.1)	66 (13.8)	11 (9.9)	
Others	5 (0.8)	2 (0.4)	3 (2.7)	
Occupation	N = 1,636	N = 1,303	N = 333	P- value[b]
Student	214 (13.1)	188 (14.4)	26 (7.8)	0.001
Housewife	1032 (63)	813 (62.4)	219 (65.8)	0.26
Employee	290 (17.7)	224 (17.2)	66 (19.8)	0.26
Own business	100 (6.1)	78 (6)	22 (6.6)	0.67
Contraceptive method used before pregnancy	N= 150, n (%)	N= 65, n (%)	N= 85, n (%)	< 0.001[c]
Condom	12 (8)	7 (10.8)	5 (5.9)	
Withdrawal	1(0.7)	1 (1.5)	0 (0)	
DMPA	21 (14)	1 (1.5)	20 (23.5)	
OCP	109 (73)	50 (76.9)	59 (69.4)	
Emergency OCP	7 (4.7)	6 (9.2)	1 (1.2)	
Antenatal care	1441 (85.6)	1162 (86.3)	279 (82.5)	0.09[a]
Gestational age at 1st ANC (weeks), N = 1,070				
Median (IQR)	21 (15,27)	21 (15,27)	21.5 (14.2,28)	0.82[a]
Number of visit at ANC clinic, N = 1171				
Median (IQR)	6 (4,8)	6 (4,8)	6 (3.2,8)	0.54[a]
Places for ANC, N= 1437				0.70[a]
Department of OB/ GYN Siriraj Hospital	951 (66.2)	770 (66.6)	181 (64.6)	
Primary care unit of Siriraj Hospital	24 (1.7)	18 (1.6)	6 (2.1)	
Other hospitals	462 (32.1)	369 (31.9)	93 (33.2)	
Hematocrit at 3rd trimester (%)	N = 1612, n (%)	N = 1285, n (%)	N = 327, n (%)	
	34 (32,36)	34 (32,36)	34 (31,36)	0.009[a]
Anemia (hematocrit below 33%), n (%)	503 (31)	385 (29.9)	118 (36.1)	0.03[b]

* compared between primi and multi-gravidarum, [a] = Ranksum test, [b] = Chi square test, [c] = Fisher's exact test

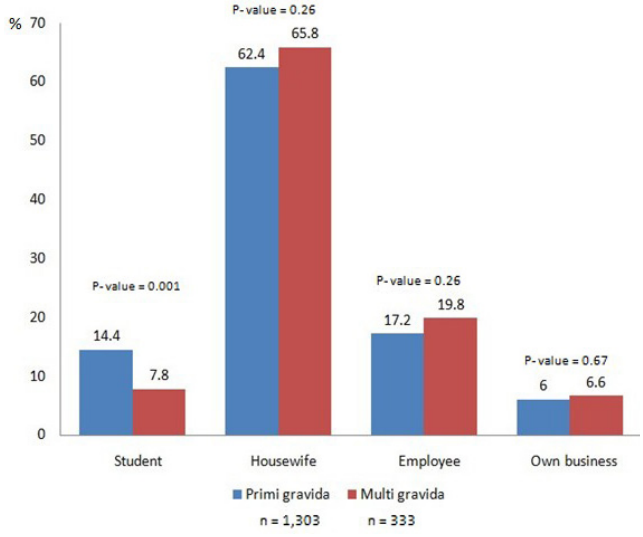

Fig 1. Occupation of participants.

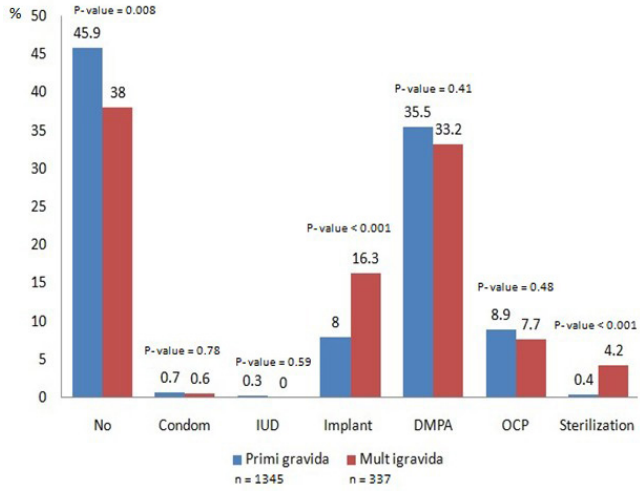

Fig 2. Contraception use after delivery.

TABLE 2. Pregnancy outcomes

Maternal outcomes	Total teenage pregnancy N = 1684, n (%)	Primi gravida N = 1346, n (%)	Multi gravida N = 338, n (%)	P- value*
Abnormal pregnancy, N = 130		n =112 (8.3%)	n = 18 (5.3%)	0.07[b]
Abortion		108 (96.4)	16 (88.9)	
Ectopic pregnancy		4 (3.6)	2 (11.1)	
Route of delivery	N = 1554	N = 1234	N = 320	0.62[a]
Normal delivery	1159 (74.6)	914 (74.1)	245 (76.6)	
Operative vaginal delivery	12 (0.8)	11 (0.9)	1 (0.3)	
Caesarean section	383 (24.6)	309 (25)	74 (23.1)	
Gestational age (wk), median (IQR)	38 (37,39)	38 (37,39)	38 (37,39)	0.89[a]
Preterm, n (%)	292 (18.8)	228 (18.5)	64 (20)	0.53[b]
Gestational age (wk); Median (IQR)	35 (33, 36)	35 (32,36)	35 (34,36)	0.29[a]
Maternal complications				
Postpartum hemorrhage	27 (1.7)	19 (1.5)	8 (2.5)	0.24[b]
Preeclampsia				
Mild	16 (1)	12 (0.97)	4 (1.25)	0.75[c]
Severe	24 (1.5)	22 (1.8)	2 (0.6)	0.20[c]
Eclampsia	3 (0.2)	3 (0.2)	0 (0)	> 0.99[c]
Fetal outcomes	N = 1554, n (%)	N = 1234, n (%)	N = 320, n (%)	
Fetal birth weight (gram), median (IQR)	2890 (2610, 3160)	2890 (2600,3150)	2900 (2640,3190)	0.25[a]
Low birth weight	290 (18.7)	236 (19.1)	54 (16.9)	0.36[b]
Apgar scores <7 at 5 minutes	10 (0.65)	8 (0.7)	2 (0.6)	> 0.99[c]
Fetal anomalies	21(1.4)	18 (1.5)	3 (0.9)	0.60[c]
NICU admission	57(3.4)	49 (3.7)	8 (2.4)	0.21[b]
Neonatal death	11(0.7)	8 (0.6)	3 (0.9)	0.71[c]

* compared between primi and multi-gravidarum, [a] = Ranksum test, [b] = Chi square test, [c] = Fisher's exact test

DISCUSSION

This study demonstrated the high prevalence of repeat pregnancy (20%) among teenagers diagnosed as abortion, ectopic pregnancy or delivered at Siriraj hospital, although many strategies to reduce the rate of unintended teenage pregnancy had been implemented for more than ten years. This evidence was similar to many regions worldwide.[1,3,4,7,8] To date, no evidence from the systematic review has revealed the effective intervention to reduce repeat pregnancy in teenagers. Context, motivation, planning for the future, taking control, situating the intervention within a broad context, connectedness and tailoring with regard to providing a conceptual framework were suggested for future research.[6]

In this study population, the age of multi-gravida pregnancies was higher than those in primi-gravida (the median and IQR of age were 18[17,19] and 17[16,18] respectively), although the highest levels of education were not different. Additionally, the proportion of occupational status revealed that only 8% of repeat pregnancy group were students compared with 14.4% in primi-gravida group. These findings also revealed that most of them (63%) were the housewives. The loss of chance to get higher education is one of the important factors leading to financial problems and the risk of living in poverty. Data from the Ministry of Public Health, Thailand, revealed the economic loss due to teenage pregnancy was around 14,000 million baht per year. This was similar to the United States, which spent nearly $10 billion in 2010 for public assistance and healthcare support of teenage mothers and their children as well as the loss of their income from lower education.[13]

The rate of contraceptive usage among our population was very low. Even in multi-gravida pregnancy, only one-fourth were noted as using contraception before pregnancy. However, this rate is 5 times more than primi-gravida teenagers. This finding might show the weakness of pregnancy prevention program as well as access to the reproductive health care for proper information about contraception and family planning. Although, the initiation of early postpartum long-acting reversible contraception (LARC), either intrauterine devices (IUDs) or contraceptive implantations, was recommended as the cost effective methods to prevent repeat pregnancy[14,15] which would dramatically decrease the rate of repeat pregnancy during the first 2 years after delivery,[16,17] nearly half of them (44%) were discharged from the hospital without any contraception. The medical records showed the decision making for contraception was finally made at post-partum or post abortion check-up. However, more than half of them were lost to follow up. Furthermore, contraceptive injection was the most common type of contraception used at immediate postpartum period in primi-gravida teenagers, whereas the high rate of discontinuation was also noted from another study.[18] Only 8.3% and 16.3% of primi and multi-gravida teenagers received LARC. The limitations to access of this type of contraception were the informed consent given by their parents (if age < 18 years old) which was needed to comply with the law including the high expense of this method. Therefore, planning during the antenatal period might be a key for success for implementation of LARC. In addition, knowledge about appropriate sexual behavior[19] along with the ways to access for their reproductive healthcare services are still the important issues for prevention of unintended teenage pregnancy in Thailand.[20]

There was some previous evidence, which demonstrated that the second birth of teenage mothers was more likely to be preterm and low birth weight.[21] The immediate pregnancy and neonatal outcomes including preterm and low birth weight among primi and multi-gravida teenagers in this study were quite similar. Only the rate of anemia was significantly higher in multi- gravida teenagers. A previous study revealed, that younger age of pregnant woman was an independent risk factor for anemia.[22] This evidence might reveal the problem of nutritional status represented by anemia for which the clear independent factors were still inconclusive.

This study was a cross- sectional retrospective study in single tertiary care center, so the generalizability might be limited. However, analysis of the prevalence of repeat pregnancy, education and contraceptive use might give the useful information to develop and improve the optimal strategies for this public health concern. Further study about risky behaviors and psychological problems which could affect to child care and development are still required to demonstrate the long term impact of repeat pregnancy.[23-25]

CONCLUSION

The prevalence of repeat pregnancy of teenagers in this study was 20% and lack of proper contraception after pregnancy might be the important factor. Although immediate pregnancy outcomes among primi- and multi-gravida teenagers revealed no significant difference, long term outcomes of both teenage mothers and their children are still limited and long term follow up is needed.

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Source of Support and Conflict-of-Interest

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