# Decisions of Pregnant Adolescents Towards Antenatal Care Attendance and Their Immediate Postpartum Adaptation: Comparison between Students and Other Occupations

Siraya Kitiyodom MD\*

\* Department of Obstetrics and Gynecology, Maharat Nakhon Ratchasima Hospital, Nakhon Ratchasima, Thailand

**Background:** Adolescent pregnancy is risky with multiple complications during pregnancy and the delivery period. Adolescent pregnancy among students is more risky because the mothers did not intend to get pregnant, have poor relationship with the husband and do not take care of their child themselves as in other occupations.

**Objective:** The decisions of adolescent mothers towards antenatal care (ANC) attendance and their postpartum adaptation; comparing students with other occupations

Material and Method: This retrospective hospital-based study used data from the records of 777 adolescent mothers who attended the adolescent postpartum clinic at Maharat Nakhon Ratchasima Hospital from January 2012 to December 2013. The data were classified into students and other occupation groups. Their decisions for ANC attendance, spousal relationship, pregnancy intentions, family acceptance and postpartum adaptation (contraceptive decision, decision for taking care of baby and returning to study) from both groups were compared and analyzed.

Results: The prevalence of student mothers was 63.3% of all adolescent pregnancies. The following factors were more common in student mothers with statistical significance, odd ratio (95% confidence interval): unintended pregnancy 3.66 (2.45-5.47), family non-acceptance 1.71 (1.03-2.93), poor ANC (no ANC and ANC after 12 weeks) 22.82 (14.33-37.34). Other factors including no ANC attendance, decision for taking care of the baby, contraceptive decision (before and after deliveries), and the contraceptive method was no different between the groups. After delivery, adolescents decided to return to their studies; 58.7% for students and 33.3% for other occupation groups.

**Conclusion:** Students account for 63.3% of all adolescent pregnancies. None of them was married so the majority did not intend to be pregnant and not be accepted by their families, leading to poor ANC attendance. Half of them decided to return to their studies. Further studies should be prospectively performed at schools to see the true prevalence of pregnancy and the related factors such as pregnancy termination, withdrawal from school and the continuation of their studies.

Keywords: Pregnant adolescent, ANC attendance, Postpartum adaptation

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Adolescent pregnancy has become a worldwide problem particularly in developing countries. Annually, approximately 11% of all births globally occur to adolescents<sup>(1)</sup>. The WHO considers adolescent pregnancy as part of their health index for a country<sup>(2)</sup>. The Saiyairak Hospital project report, Department of Health, Ministry of Public Health of Thailand, revealed that adolescent pregnancy (age <20 years) was found in 18.72% of all pregnancies<sup>(3)</sup>. In Maharat Nakhon

## Correspondence to:

Kitiyodom S, Department of Obstetrics and Gynecology, Maharat Nakhon Ratchasima Hospital, Nakhon Ratchasima 30000 Thailand

Phone: +66-89-4888072 E-mail: gratikpooh@hotmail.com Ratchasima Hospital<sup>(4)</sup>, adolescent pregnancy accounted for 15.0% (early and middle adolescents 7.0%, late adolescents 8.0%) in 2011. Adolescent pregnancy is risky with multiple complications, both for the mother and child, during pregnancy and the delivery periods<sup>(4,5)</sup>. Moreover, the complications are more striking for early and middle adolescents than for late adolescents<sup>(4)</sup>.

Furthermore, according to the Compulsory Education Act, the basic capital for life in 2004<sup>(6)</sup>, basic school education starts seven years of age and takes nine years to accomplish. At the end of education, the schoolchildren become early and middle adolescents. Thailand has about 10 million adolescents; half of them are females and 2 million them are not in the education

system<sup>(7)</sup>. A former study<sup>(8)</sup> showed that adolescent pregnancy among students is risky because the mothers were late in attending the first ANC, attending ANC less than four times, did not intend to get pregnant, had poor relationship with their husband, and did not take care of the child herself; these more prevalent for adolescent student mothers than that of other occupations.

With awareness of the adolescent pregnancy problem, Maharat Nakhon Ratchasima Hospital established an adolescent pregnancy clinic in January 2012 and later the adolescent postpartum clinic for early and middle adolescents. The aim of these clinics is to promote and educate them on breast feeding, birth control and sex education. From these clinics, it was found that around one-third of adolescent mothers are not students. Up to this point, there has not been any study on adolescent pregnancy comparing the decision to attend the ANC clinic and postpartum adaptations between students and other occupations in Northeastern Thailand. In addition, there are no studies concerning their return to school or use of birth control methods. Consequently, we are interested in studying their decision to attend the ANC clinic and their postpartum adaptation (taking care of the baby, use of birth control methods and further education) compared with students and other occupational groups among early and middle adolescents who attended the adolescent postpartum clinic, for improving adolescent pregnancy care and for preventing adolescent pregnancy.

## **Material and Method**

This is a retrospective hospital-based study approved by the ethic committee of Maharat Nakhon Ratchasima Hospital. It utilizes all medical records (777 records) at the adolescent postpartum clinic of Maharat Nakhon Ratchasima Hospital between January 2012 and December 2013. The records were classified into student (case, n = 492) and other occupation groups (control, n = 285). Decisions regarding ANC attendance, spousal relationship, pregnancy intention, family acceptance and postpartum adaptation (contraceptive decision, decisions for taking care of baby and returning to study) from both groups were compared and analyzed by descriptive statistics and odds ratio. Adolescents meant people between 10-19 years of age that could be classified into three groups<sup>(1,9)</sup>: 1) early adolescents, age 11-14 years; 2) middle adolescents, age 15-17 years; 3) late adolescents, 18-less than 20 years.

#### Results

Out of 777 adolescent pregnancies, 492 were students (63.3%) and 285 were from other occupations (36.7%) including housewife, employee and no occupation. The youngest adolescents among the students and among those from others were 12 and 13 years old, respectively. The rates of early adolescence pregnancy and primigravida were more common among the student group, as shown in the Table 1.

From Table 1, 2, concerning the spousal relationship, "stay together" (means providing care during pregnancy and having a tendency to care for the coming baby), "separate" (means partially assisting with care of during pregnancy and having a tendency to care for the coming baby) "divorce" (means no care during pregnancy nor of the coming baby) were found in 86. 2%, 1.2% and 12.4%, respectively, among the student groups, which were not significantly different from 91.2%, 0.7% and 8.1%, respectively, in the other occupational groups.

Accidental or unintended pregnancy and family denial were more commonly found in the student group with statistical significance, 3.66 this was 1.71 times more likely for the student group versus those of other occupations. The rates of no ANC attendance were similar in both groups while the ANC attendance with poor quality (ANC attendance at more than 12 weeks of pregnancy or no ANC attendance)<sup>(10,11)</sup> was much more commonly found among student groups, 22.82 times that of the other occupations group, with statistical significance, as shown in Table 1, 3.

All adolescent mothers from both groups decided to look after their babies themselves, no one from either group wanted to offer their baby to other people or an institute.

The rates of birth control methods use were not different between the student and other occupation groups, viz.; they increased from 33.6% and 35.2% in 2012 to be 62.2% and 57.0%, respectively. All methods of birth control were temporary, i.e. condom and oral contraceptive pills. After the adolescent mothers gave birth and was educated about birth control in the adolescent postpartum clinic, the mothers from the student and other occupations group increased the requirement of the birth control from 48.2% and 46.7% before pregnancy to 97.8% and 98.2%, respectively. Moreover, 53.4% of the student group and 54.3% of other occupation group requested long-acting reversible contraceptive (LARC) methods, viz., progestogen injection, progestogen implant and IUD, in descending order. On the other hand, the short acting

**Table 1.** The characteristics and ANC attendance of adolescent mothers

Characteristics	Occupation					
	Stu	idents	Others			
	n	%	n	%		
Age interval						
Early adolescent	49	10.0	14	4.9		
Middle adolescent	443	90.0	271	95.1		
Order of pregnancy						
Primigravida	467	94.9	257	90.2		
Multigravida	25	5.1	28	5.1		
Spouse						
Stay together	425	86.2	260	91.2		
Separate	6	1.2	2	0.7		
Divorce	61	12.4	23	8.1		
Pregnancy plan						
Unplanned pregnancy	440	89.4	199	69.8		
Planed pregnancy	52	10.6	86	30.2		
Family acceptance						
Acceptance	425	86.4	261	91.6		
Denial	67	13.6	24	8.4		
ANC attendance						
<12 weeks	154	31.3	260	91.2		
≥12 weeks	312	63.4	2	0.7		
No ANC	26	5.3	23	8.1		

ANC = antenatal care

Table 2. The comparison of characteristics of adolescent mothers between students and other occupations

Characteristics		Occupa	tion		Odds ratio	95% CI
	Stu	Students Others		hers		
Age interval						
Early adolescent	49	10.0%	14	4.9%	2.14	1.14-4.28
Middle adolescent	443	90.0%	271	95.1%	1.00	-
Order of pregnancy						
Primigravida	467	94.9%	257	90.2%	2.04	1.12-3.72
Multigravida	25	5.1%	28	5.1%	1.00	-
Spouse						
Stay together	425	86.2%	260	91.2%	0.61	0.36-1.01
Separate plus divorce	67	13.6%	25	8.8%	1.00	_

reversible methods that the adolescent mothers from both groups wanted to use were the oral contraceptive pills and condom, in descending order. There was no difference between both groups in the rate of decision to practice as well as the method of birth control, as

shown in the Table 4.

There were 38.0% of adolescent mothers from the student group did not return to school compared with 33.3% those from other occupations, as shown in Table 4.

Table 3. ANC attendance for adolescent mothers compared between students and the other occupation groups

Characteristics		Occup	ation	Odds ratio	95% CI	
	St	udents	C	Others		
Pregnancy plan						
Unplanned pregnancy	440	89.4%	199	69.8%	3.66	2.45-5.47
Planed pregnancy	52	10.6%	86	30.2%	1.00	-
Family acceptance						
Acceptance	425	86.4%	261	91.6%	1.00	-
Denial	67	13.6%	24	8.4%	1.71	1.03-2.93
ANC attendance						
ANC group	466	94.7%	262	91.9%	1.00	-
No ANC group	26	5.3%	23	8.1%	0.64	0.34-1.19
ANC quality (early ANC)						
Good quality	154	31.3%	260	91.2%	1.00	-
Poor quality	338	68.7%	25	8.9%	22.82	14.33-37.34

ANC = antenatal care

**Table 4.** Comparison of the immediate postpartum adaptation of adolescent mothers between the student and other occupation groups

Characteristics		Occupation					
	Student			Others			
	2012	2013	Total	2012	2013	Total	
Former birth control							
No	160 (66.4)	95 (37.8)	255 (51.8)	87 (64.9)	65 (43.0)	152 (53.3)	0.94 (0.70-1.27)
Yes	81 (33.6)	156 (62.2)	237 (48.2)	47 (35.1)	86 (57.0)	133 (46.7)	1
Postpartum birth control	(====)	( /	( )	()	(=)	( )	
No	11 (2.2)				5 (1.3	8)	1.28 (0.40-4.75)
Yes	481 (97.8)				280 (98.2)		1
No LARC method	224 (46.6)				128 (45.7)		1
LARC method	257 (53.4)				152 (54.3)		0.97 (0.71-1.31)
Back to school							
Yes	289 (58.7)				95 (33	5.3)	-
No	187 (38.0)				184 (64	.6)	-
Not sure	16 (3.3)				6 (2.	1)	-

LARC = long-acting reversible contraceptive

## **Discussion**

The Act of Compulsory Education of Thailand in 2004<sup>(6)</sup> provides a 9-year period for basic education. All children must study in school from seven years old until the age of 15 and that is the same age as the group of early adolescent. In the present study, there were

early adolescents in the student group more often than in the other occupations group with statistical significance (OR 2.14; 95% CI = 1.14-4.28). The student group has primigravida more than the other occupation group with statistical significance (OR 2.04; 95% CI = 1.12-3.72). Actually the students are not allowed to get

pregnant but they still have unplanned pregnancy and no family acceptance, 3.66 and 1.71 times, respectively, more than that of the other occupations group, with a statistically significant difference. These findings are consistent with the results of the former study that found that unplanned pregnancy among students was 5.32 times more frequent than that of the other occupations. Moreover, they considered pregnancy termination, 7.61 times more frequently than the other occupations group<sup>(8)</sup> and this may be why pregnancy among students is always primigravida.

In the present study, the rates of adolescent mothers who do not attend the ANC clinic are similar between the student and the other occupation groups. However, the poor quality ANC (ANC after 12-week pregnancy or no ANC attendance)(10,11) among students is much more prevalent than in the other occupations group with statistical significance (OR 22.82; 95% CI = 14.33-37.34), possibly because some adolescents cannot recognize the changes relating to the first trimester of pregnancy. Furthermore, pregnant women may have the psychosocial tension response to early pregnancy(12), for instance, excitement, hesitation, and/ or confusion. These factors in combination with the social factors for each pregnant woman may affect the acceptance of pregnancy, the continuation of pregnancy, the decision towards ANC attendance and pregnancy examination. The pregnant students always conceal their pregnancy because it is unintentional or unwanted, leading to delayed ANC attendance, as seen in a previous study(8). WHO finds good quality ANC attendance before 12 weeks useful, viz., the decrease of complication during pregnancy and delivery, and a decrease in maternal and neonatal mortality(11). The poor quality ANC by students may result in more maternal or neonatal complications during pregnancy and delivery although the previous study did not find more complications during the pregnancy, delivery or postpartum periods(8) save for more anemia in the first ANC and a more common low birth weight in the student group. However, after the pre-pregnant weight adjustment, the risk of low birth weight was not found.

Regarding the relationship between the spouse and father of the baby, there is no difference between the student and the other occupation groups. This study concerns the father as the baby's co-care giver, during pregnancy and after birth. The adolescents that can adapt themselves through the pregnancy and delivery periods do not have the pregnancy terminated due to the acceptance of the mother's own family and the father's family. After delivery, all adolescent mothers

decided to look after the babies themselves or within their families; they do not give the babies to anyone else or to an institute. In the former study, the relationship with the father of the baby can affect the decision of the adolescents to continue pregnancy and the pregnancy can influence the adolescents to adjust their relationship with the father of the baby in two aspects(13): more spousal dependence and change of sexual contact. About 86% of pregnant women and spouses express their love and care to each other but through less sexual contact, 50.2% of pregnant adolescents request the spouses to do something instead. However, some pregnant adolescents have problems with the relationship with the spouses, viz.; they realize that their spouses have less care, less love and less harmony for them because of lack of responsibility for the pregnancy.

In this study, birth control is not different between the students and other occupations, both before or after pregnancy and even method. However, the rate of birth control of adolescents before pregnancy increased as compared with that of 2012 and 2013 because they realize the problem of adolescent pregnancy from campaigns but they have some pitfalls in practice leading to unintended pregnancy. Half of adolescents (51.8-53.3%) have never had birth control awareness training whereas the two common methods they chose are condom and oral contraceptive pill, which are comparable to 55.7%, reported from the family planning unit, Sri Nakarin Hospital that also found the common choice adolescents used was the oral pill. Because of the low rate of birth control, the adolescents have a great chance getting pregnant. Without birth control, 20% of adolescents become pregnant within one month and 50% within 6 months<sup>(14)</sup>. In our study, after giving birth and receiving the counsel from the adolescent postpartum clinic, 97.8-98.2% of adolescent mothers decide to accept birth control, 53.4-54.3% chose long-acting reversible contraception (LARC) and the most frequent LARC method they chose is progestogen injection whereas the oral pill, the non-LARC method, is the second most frequent. These are similar to the results from the previous study(14) that showed all adolescents, after counseling, accepted birth control and the most frequent method they choose was the LARC method, particularly the progestogen injection while the second common method is the oral pill, the non-LARC method. The most appropriate birth control for the adolescents who are not ready for pregnancy is LARC because of its high effectiveness<sup>(15)</sup>.

After delivery, 38% of adolescents of the

student group decided not to go back to school while 33.3% from other occupations want to continue education. In the study of the adolescent mothers from the northeastern part of the country, 9.1% go back to school, 55.5% have no occupation, 35.4% have other occupations(16); however, these adolescents are not classified according to their occupations before getting pregnancy. The rate of going back to school is very low as compared with our study. This is possibly because it is a 2011 study 2011, the year prior to the realization of the problem of adolescent pregnancy by the government and the Act of Child bearing Protection that lets the pregnant adolescents continue education or have a pause and then return to school. It permits pregnant adolescents to have a chance still at education.

## Conclusion

The pregnant adolescents of the student group have higher risk of poor quality ANC attendance than that of other occupations. However, the decision of taking care of their own babies and accepting birth control were not different in either group. This study is retrospective, which may have some errors due to loss of some data, limitations or lack of information, for instance, factors affecting the decisions of adolescents, the family aspect of the adolescents, the economic status of the family. All these psychosocial factors can affect the adaptation of adolescents. Therefore, for the sake of completeness, further study should be planned as a prospective and probably qualitative study for deriving the useful information for the improvement of the care for pregnant adolescents.

## What is already known on this topic?

Adolescent pregnancy is risky with multiple complications, both for the mother and child, during pregnancy and the delivery periods. The complications are more striking for early and middle adolescent than for late adolescence. A previous study showed that adolescent pregnancy among students is risky because the mothers were late in attending the first ANC, to attending ANC less than four times, did not intend to get pregnant, have poor relationship with the husband, and they did not take care of the child themselves. These were more prevalent among for adolescent student mothers than that of other occupations.

## What this study adds?

Up to this point, there has not been any study on adolescent pregnancy comparing the decision to

attend the ANC clinic and postpartum adaptations between students and other occupations in Northeastern Thailand. In addition, there are no studies concerning their return to school or use of birth control. Consequently, we are interested in studying their decision to attend the ANC clinic and their postpartum adaptation (taking care of the baby, use of birth control methods and further education) compared with students and other occupational groups among early and middle adolescents who attended the adolescent postpartum clinic, for improving adolescent pregnancy care and for preventing adolescent pregnancy.

## Acknowledgement

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## **Potential conflicts of interest**

None.

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การศึกษาการตัดสินใจในการฝากครรภ์และการปรับตัวหลังคลอดบุตรเปรียบเทียบระหว<sup>่</sup>างมารดาวัยรุ<sup>่</sup>นอาชีพนักเรียนนักศึกษา กับอาชีพอื่น

# สิรยา กิติโยดม

ภูมิหลัง: การตั้งครรภ์ในวัยรุ่นพบวามีความเสี่ยงต่อการเกิดภาวะแทรกซ้อนทั้งต่อมารดาและทารกตลอดการตั้งครรภ์และระหวางการคลอดโดยพบวา ความเสี่ยงต่อภาวะแทรกซ้อนต่าง ๆเพิ่มสูงขึ้นในสตรีตั้งครรภ์วัยรุ่นอาชีพนักเรียน เนื่องจากมักเป็นการตั้งครรภ์ไม่พึงประสงค์มีความสัมพันธ์ ที่ไม่มั่นคงกับคู่ครองและปัญหาการดูแลบุตรมากกว่าอาชีพอื่น

วัตถุประสงค์: เปรียบเทียบการตัดสินใจในการฝากครรภ์และการปรับตัวหลังคลอดบุตรระหว่างมารดาวัยรุ่นอาชีพนักเรียน นักศึกษากับอาชีพอื่น
วัสดุและวิธีการ: เป็นการศึกษาย้อนหลัง (retrospective hospital-based study) โดยรวบรวมรายงานย้อนหลังจากข้อมูลบันทึกคลินิกสตรีตั้งครรภ์
วัยรุ่นหลังคลอดและจากเวชระเบียนโรงพยาบาลของมารดาวัยรุ่น 777 ราย ที่มารับบริการที่คลินิกสตรีตั้งครรภ์วัยรุ่นหลังคลอดที่โรงพยาบาล
มหาราชนครราชสีมา ระหวาง เดือนมกราคม พ.ศ. 2555 ถึง ธันวาคม พ.ศ. 2556 โดยแบ่งเป็น 2 กลุ่มใดแก่ มารดาวัยรุ่นอาชีพนักเรียน นักศึกษา
และมารดาวัยรุ่นอาชีพอื่น ทำการรวบรวมข้อมูลต่างๆ เกี่ยวกับข้อมูลทั่วไป การตัดสินใจฝากครรภ์ สัมพันธภาพกับบิดาของเด็ก ความตั้งใจมีบุตร
การยอมรับของครอบครัว การปรับตัวหลังคลอดบุตร (การเลี้ยงดูบุตร การตัดสินใจการคุมกำเนิด การกลับไปศึกษา) บันทึกข้อมูลในแบบบันทึกข้อมูล
ที่จัดทำขึ้นจากนั้นจึงนำข้อมูลที่ใดไปวิเคราะห์

ผลการศึกษา: พบมารดาวัยรุ่นอาชีพนักเรียน นักศึกษาร้อยละ 63.3 และอาชีพอื่นร้อยละ 36.7 มารดาวัยรุ่นอาชีพนักเรียน นักศึกษา ไม่ได้มีการวางแผน การตั้งครรภ์และครอบครัวไม่ยอมรับสูงกว่าอาชีพอื่นอยางมีนัยสำคัญ พบมีการฝากครรภ์ที่ไม่ได้คุณภาพ (ฝากครรภ์หลัง 12 สัปดาห์หรือไม่เคยฝากครรภ์ สูงกว่าอยางมีนัยสำคัญ 22.82 เท่าในอาชีพนักเรียน นักศึกษา โดยไม่พบความแตกต่างกันของการไม่ฝากครรภ์ในทั้งสองกลุ่ม การตัดสินใจเลี้ยงดูบุตร และการตัดสินใจคุมกำเนิดไม่พบความแตกต่างกันระหว่างอาชีพนักเรียน นักศึกษาและอาชีพอื่น ทั้งการคุมกำเนิดก่อนตั้งครรภ์ หลังคลอดบุตรรวมทั้ง ลักษณะวิธีการคุมกำเนิดที่เลือกใช มารดาหลังคลอดบุตรอาชีพนักเรียน นักศึกษาหลังคลอดบุตรตัดสินใจกลับไปศึกษาต่อร้อยละ 58.7 และพบวามารดาอาชีพอื่นมีความตั้งใจร้อยละ 33.3 อยากกลับไปศึกษาต่อ

สรุป: มารดาวัยรุ่นอาชีพนักเรียน นักศึกษามีความเสี่ยงสูงกวา่อาชีพอื่นในการฝากครรภ์ที่ไม่ได้คุณภาพ แต่ไม่พบความแตกตางกันในการตัดสินใจเลี้ยงดูบุตร และการคุมกำเนิด