



## Factors Associated with Pregnancy among Primigravida Adolescents at King Chulalongkorn Memorial Hospital.

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### Abstract

**Background:** Adolescent pregnancy has become an important health issue in Thailand. It is not only a health problem for the mother and child but it is also associated with socioeconomic and demographic implications.

**Objective:** To study factors associated with pregnancy among primigravida adolescents.

**Setting:** Postpartum ward at King Chulalongkorn Memorial Hospital

**Material and Method:** The case control study of 110 adolescents under 20 years of age (55 adolescent with pregnancy and 55 nonpregnant adolescents from the 1<sup>st</sup> of July to the 31<sup>st</sup> of August, 2009. Cases and controls were matched by aged and socioeconomic. Associated factors with pregnancy were frequency, percentage, mean, and standard deviation. Chi-square test, Fisher's exact test, relative risk and odds ratio were used to test the association between these variables with  $\alpha = 0.05$ .

**Results:** The results showed that there were 7 factors significantly associated with adolescent pregnancy. They were occupation (housewife) OR=5.13 (95%CI 2.26, 11.62), level of education (secondary) OR=4.6 (95%CI 2.08, 10.48), grade point average (GPA<2.00) OR = 3.75 (95%CI 1.26, 11.20), staying with a friend or husband OR=2.98 (95%CI 1.30, 6.86), personality (self-confident) OR=2.23 (95%CI 1.02, 5.28), low family income (<8,000 Baht/ month) OR=2.44 (95%CI 1.13, 5.25) and low level of sexual knowledge OR=3.89 (95%CI 1.76, 8.59)

**Conclusion:** Socioeconomic situations were significantly associated with pregnancy among adolescents. From the previously mentioned associated factors, it can be concluded that prevention should begin at home and then involve schools, teachers and friends.

**Keywords:** Adolescents pregnancy, Sexual relationship, Coitus.

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## Introduction

Adolescent pregnancy and childbearing entail a high risk of maternal death for the adolescent, and the children of young mothers have higher levels of morbidity and mortality<sup>(1)</sup>. These Pregnancy and childbearing may cut short an adolescent's education and threaten her economic prospects, employment opportunities and overall well-being. Adolescent mothers may pass on to their children a legacy of poor health, substandard education and subsistence living, creating a cycle of poverty that is hard to break<sup>(2)</sup>.

Adolescent pregnancy is a major social issue and more critical problem. An estimated 14 million women aged 15-19 years gave birth each year in 1995-2000, with 12.8 million births occurring to adolescents in developing countries<sup>(1)</sup>. The regional average rate of births, per 1,000 women aged 15-19 years, is 56 in Asia and 70 in Thai, compared to the world average adolescent fertility rate of 54 births per 1,000 women aged 15-19 years.<sup>(3)</sup>

In Thailand, the report of Thailand's Ministry of Public Health revealed that the adolescent pregnancy rate was increased slightly from 119.3 persons per 1,000 in 2002 to 107 persons per 1,000 in 2003. In addition, 78-85% of adolescent pregnancy were unplanned. About three fourths of adolescent pregnancy were the first pregnancy.<sup>(4)</sup> In 2003 in King Chulalongkorn Memorial Hospital, rate of adolescent pregnancy was 82.6 per 1,000 deliveries<sup>(5)</sup>. In accordance with the data collection done from 2006-2008 in King Chulalongkorn Memorial Hospital concerning pregnancy and child delivery of adolescents, it showed that the rate of first pregnancy for women under 20 years were 6.59% and 5.05% respectively.

The above information made the researcher interested in studying factors associated with pregnancy among primigravida adolescent. The results of this study can be used to guidelines of policy to

preventive measurement to keep those adolescent out of pregnancy.

## Material and Method

This research was a retrospective case control study. The objective was to study factors associated with pregnancy among primigravida adolescents. The case group included 55 adolescents under 20 years of age who were admitted for delivery at the postpartum ward of King Chulalongkorn Memorial Hospital from the 1<sup>st</sup> July to the 31<sup>st</sup> August, 2009.

The control group included 55 nonpregnant adolescents who came to visit their friends and relatives in the same ward during the same period. Among nonpregnant adolescents, some reported that they already had sexual relation and coitus with their boyfriend.

## Test for content validity

The researcher consulted with thesis committee and 3 experts for the content validity of questionnaires. It was then improved to be in line with the research objectives before using for the study subjects. The reliability of test of sexual knowledge and opinion toward sex was 0.78 and 0.89.

The data was collected using self-administered questionnaires. The data were analyzed using the SPSS program. Descriptive statistics used were frequency, percentage, mean, and standard deviation. Chi-square test, Fisher's exact test, relative risk and odds ratio were used to test the association between these variables with  $\alpha = 0.05$ .

## Results

The general characteristics among adolescents of cases and controls are presented in Table 1. The mean age of cases was  $17.5 \pm 1.5$  and the control was  $17.5 \pm 1.1$ , respectively. Most of pregnant group finished primary/secondary school (65.5%), whereas

**Table 1** Distribution of general characteristics among pregnant and nonpregnant adolescent

	Pregnant (n=55) (%)	Nonpregnant (n=55) (%)
Age (year)	17.5±1.5	17.5±1.1
Level of education		
Primary/secondary	36 (65.5)	15 (27.3)
≥ High school	19 (34.5)	40 (72.7)
Grade Point Average	2.46±0.72	2.66±0.6
Occupation		
Unemployed/housewife	41 (74.5)	20 (36.4)
Student	14 (25.5)	35 (63.6)
Personality		
Self - confident	42 (76.4)	32 (58.2)
Indecisive	13 (23.6)	23 (41.8)
Sexual behavior of sister(coitus)		
Yes	5 (9.1)	4 (10.8)
No	50 (90.9)	51 (89.2)
Sexual behavior of close friends(coitus)		
Yes	13 (23.6)	12 (21.8)
No	42 (76.4)	43 (78.2)
Parental status		
Living together	28 (50.9)	35 (63.6)
Separated (divorced/dead)	27 (49.1)	20 (36.4)
Residence		
Staying with parents/relative	30 (54.5)	43 (78.2)
Staying with friends/husband	25 (45.5)	12 (21.8)
Family income (Baht/Month)	10,757±7,904.7	11,898±7,752.3
Attitude toward premarital sex		
Inappropriate	29 (52.7)	37 (67.3)
Appropriate	26 (47.3)	18 (32.7)
Level of sexual knowledge		
low	36 (65.5)	18 (32.7)
Moderate to high	19 (34.5)	37 (67.3)



most of nonpregnant group finished high school and more (72.7%). The mean grade point average in study group was  $2.46 \pm 0.72$  compared with  $2.66 \pm 0.6$  in the control group. The mean income of family in pregnant group was  $10,757 \pm 7,904.7$  and the control

was  $11,898 \pm 7,752.3$ , respectively. There were no significant differences in parental status, level of sexual knowledge, sexual of sister and sexual of close friend between both groups.

Table 2 shows factors significantly associated

**Table 2** Significant factors associated with pregnancy

Factor	OR	95%CI	$\chi^2$	p-value
<b>Personal factor</b>				
Age (years)	1.5	0.6, 3.8	0.853	0.356
Number of sibling	0.9	0.4, 2.0	0.039	0.844
Level of education*	4.7	2.1, 10.5	14.667	<0.001
Grade point average*	3.7	1.3, 11.2	6.32	0.042
Occupation*	5.1	2.3, 11.6	16.23	<0.001
Residence*	0.3	0.2, 0.8	6.883	0.009
Spending leisure time	1.6	0.4, 5.9	0.44	0.507
Personality*	2.2	1.0, 5.3	4.129	0.042
Sexual behavior of sister (coitus)	0.8	0.2, 3.1	Fisher's Exact	1.000
Sexual behavior of close friend(coitus)	0.9	0.4, 2.2	0.052	0.82
<b>Family factor</b>				
Family income* (Baht/Month)	2.4	1.1, 5.3	5.252	0.022
Relationships with parents	0.8	0.4, 1.9	0.176	0.675
Father's occupation	0.8	0.3, 2.7	0.087	0.768
Mother's occupation	1.7	0.4, 7.6	0.539	0.463
<b>Personality factor</b>				
Sex appeal	1.9	0.9, 4.1	2.961	0.085
<b>Sexual knowledge*</b>				
	3.9	1.7, 8.6	11.786	0.001
<b>Attitude toward premarital sex</b>				
	0.5	0.2, 1.2	2.424	0.119
<b>Sexual information</b>				
Parents/teacher/text	1.3	0.6, 3.0	0.404	0.525
Internet/video/CD/ comic book	1.8	0.7, 4.8	1.471	0.225
Friend/lover	2.1	0.9, 4.7	3.299	0.069
<b>Using media to sexual arousal</b>				
Video / CD	0.8	0.4, 1.9	0.165	0.684
Magazine/Comic books/Pornographic picture	0.6	0.3, 1.6	0.853	0.356
Internet	2.6	0.5, 14.3	Fisher's Exact	0.438
<b>Internet sex chat</b>				
	1.2	0.5, 2.5	0.149	0.699

\*Statistically significant

with adolescent pregnancy there were unemployed or housewife occupation (OR = 5.1, 95%CI 2.3, 11.6). Level of education, and academic achievement (grade point average) pregnant group finished secondary school and lower (OR = 4.7, 95%CI 2.1, 10.5) and had grade point average (GPA) less 2.00 (OR = 3.7, 95%CI 1.3, 11.2). Residence, showed that pregnant group staying with friend or husband (OR = 2.9, 95%CI 1.3, 6.9), personality; the pregnant group had self confident (OR = 2.2 95%CI 1.0, 5.3). Family factor, it was found that most of pregnant group had low family income 1,000-8,000 baht/month (OR = 2.44, 95%CI 1.1, 5.2). Sexual knowledge, it discovered that pregnant group had low level of sexual knowledge (OR = 3.9, 95%CI 1.8, 8.6)

## Discussion

The objective of this case control was to study factors associated with pregnancy among primigravida adolescent at King Chulalongkorn Memorial Hospital. A previous study has been found occupation as a significant factor for pregnancy and found that adolescent who had unwanted child have occupation before pregnancy.<sup>(4,5)</sup> The teenage mothers were not married and often dropped out school and could not hold full time employment. In this study whether adolescent pregnancy was a cause or effect of unemployment or drop out of school cannot be verified.

Adolescents who were pregnant had lower educational level than non pregnant group. In this respect the education of girls is the most important factor, because it empowers them to decide on their own lives, it enables them to develop planning behavior. Thus better education has two opposing effects: it postpones marriage, makes the adolescent less dependent on parental influences and therefore leads to premarital sexual relations and pregnancies.<sup>(6)</sup>

The finding that adolescents who were pregnant had lower academic achievement (GPA) level than non pregnant group. Adolescents who are academically

successful feel connected to their school and have expectation for the future and more likely to delay sexual intercourse. That's why teens who were pregnant have poorer academic because sexual activity draws them into activity that take time away from academic.<sup>(7)</sup>

Residence was another factor in this study, the result pointed out that the majority of the pregnant adolescents were living with friends and husband. This finding adolescent who lived by themselves will have freedom to take care of themselves or free from the rules imposed on them by their family or society.<sup>(4,8)</sup> However, this result difference by Weruvanaruk C.<sup>(9)</sup> found that residence was not associated with sexual intercourse. Thus, whether the female adolescents live with their parents or by themselves is not an important factor.

This study found that the adolescents who were pregnant were more self-confident. This may be patterns of social self-perceptions which significantly related to adolescents' own involvement and their perceptions of friends involvement in prosocial and problem behaviors.<sup>(10)</sup>

Family income, the result showed that the pregnant adolescents usually had low family income. That is the economic and social situation nowadays makes the parents have more duties and works, so they have less time to take care their children. Furthermore, young women's greater motivation to attain higher schooling and to work for wages.

Adolescent who were pregnant had lower sexual knowledge level than nonpregnant group. Adolescents who are knowledgeable about sex should understand the nature of sexuality, know how to behave themselves properly, and have appropriate sexual behavior to compared to their age.<sup>(11)</sup> On the other hand, the adolescents have less knowledge about birth control are more likely to be pregnant if there are exposed to sexual activity.

From this study we recommendation that



Encouraging adolescents to stay in school may be one of the immediate prevention programs. Therefore, government and non-governmental organization have to cooperate to help adolescents to stay in school.

In conclusion, socioeconomic situations were significantly associated with pregnancy among adolescents. It is difficult to prevent this problem.

From the previously mentioned associated factors, it can be concluded that prevention should begin at home and then involve schools, teachers and friends. Government and non-governmental organizations have to cooperate, share policies and resources to attack the problems. Staying in school may be one of the immediate prevention programs.

## References

1. Bonell C, Allen E, Strange V, Copas A, Oakley A, Stephenson J, et al. The effect of dislike of school on risk of teenage pregnancy: testing of hypothesis using longitudinal data from a randomized trial of sex education. *J Epidemiol Community Health* 2005;59:223-30.
2. Wellings K, Nanchahal K, Macdowall W, McManus S, Erens B, Mercer CH, et al. Sexual behaviour in Britain: early heterosexual experience. *Lancet*. 2001;358:1843-50.
3. World Health Organization; Department of child and adolescent health and development. Adolescent pregnancy: Unmet needs and undone deeds: a review of the literature and programmes. (Issues in adolescent health and development); 2007.
4. Boonyathan W. Factors associated with adolescent pregnancy among adolescent primigravida attending antenatal care clinic at Samutsakhon Hospital (Dissertation). Bangkok, Mahidol University 2006:206.
5. Sranugsriwomg S. Sex Education, contraception, and teenage pregnancy. *Med J* 2006;25:107-15.
6. Adolescents Overview and facts. A comprehensive training course: Reproductive health services for adolescents. Pathfinder International. 2002:16.
7. World Health Organization. Adolescent pregnancy (Issues in adolescent health and development). Geneva 2004:18-24.
8. Siriwanarak K. Sexual behavior and factors influence to sexual relationship among single adolescents in Udonthani non-formal education center (Dissertation). Bangkok, Mahidol University 1998:152.
9. Weruvanarak C. Relationships between opinions on premarital sex, conformity to peer groups, living arrangement and sexual relationships among female adolescents in Ubonratchathani (Dissertation). Bangkok, Mahidol University 2001:110.
10. Jacobs JE, Vernon MK, Eccles JS. Relations between social self-perceptions, time use, and prosocial or problem behaviors during adolescence. *J of Adolescent Research* 2004;19:45-62.
11. Kriaswekwisai N. Sexual behavior among M.S.3 students in Ubonratchathani province (Dissertation). Bangkok, Mahidol University; 2003:103.