

A Repeated Teenage Pregnancy in Southernmost of Thailand

Faisol Nawae, Attachai Ueranantasun, Nurin Dureh

Department of Mathematics and Computer Science, Faculty of Science and Technology,
Prince of Songkla University Pattani Campus, Thailand

Abstract

A teenager pregnancy is a complex problem arisen in many countries, particularly in developing countries including Thailand. A more severe problem is found in a repeat teen pregnancy defined as a 2nd or more successful pregnancy for a teenage mother before the age of 20. Pattani, one of the poorest provinces in Thailand, has experienced a decreased pregnancy rate in teenagers, but the rate of repeat teen pregnancy has shown an increasing trend. This study is aimed to investigate factors associated with teenage repeat pregnancy in the province. The data between year 2016 and 2018 were retrieved from the Pattani Provincial Health Office and the number of samples is 2,259 observations. Chi-squared test and logistic regression were employed to investigate the factors related to teenage repeat pregnancy. The results show that 406 (18.0 %) cases are a repeat pregnancy. The majority of the samples are Muslim (91.2%) with 19 years old (36.9%) and 87.1 percent are not at school after finishing the primary school. Most of them had an intended pregnancy (88.6%), and 56 percent of the sample had a previous sex education, while 89.2% and 59.8% of them used a contraceptive before getting pregnant and after giving birth, respectively. The association analysis with logistic regression reveals that the factors related to a repeat teen pregnancy significant p-value less than 0.05 are age, religion, districts, contraceptive use and having a counselling after delivery.

Keywords: *Repeated pregnancy, Teenager, Factors*



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INTRODUCTION

Teenage pregnancy can be defined as a pregnancy occurred in a woman aged 10 to 19 years, which is distinguished into an early teen period (10-14 years) and a late teen period (15-19 years). Pregnancy in teenagers is a public health concern because it is associated with poor physical and mental health conditions as well as social problems, especially in early teenage [1]. An early pregnancy causes a consequent problem including anemia in pregnancy, preterm delivery, and fetal intrauterine growth retardation, commonly found among pregnant teenagers [2].

Teenage pregnancy is a complex problem arisen in many countries, particularly in developing countries, including Thailand. Even though Thailand has tried to solve the problem, the number of teenage pregnancies persist, and it tends to increase every year [3]. Teenage pregnancies in Thailand, according to UNFPA Thailand, has steadily increased over the past fifteen years. In 2002, out of every one thousand girls under 19, 32 of them had been pregnant at least once, while in 2014, this number had increase d to 53 [4]. Thereby, there are many factors related to teenage pregnancy involving personal factors, family factors, peer pressures and social issues and environmental problems [5]. In addition, the repeat pregnancy problems in teenager there is also the problem need to be resolved. Repeated pregnancy in teenagers can affect many fields, as the

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health of individuals, family community, society and economy. [6][7]. Average Thailand birth rate among women repeat pregnancy in aged younger than 20 years was reported to be 14.85 percent in 2019, which is still higher than the target set of Ministry of Public Health at 14.5 percent in 2019.

The southernmost of Thailand is much different from other regions of the country. The report from Health Data Center Ministry of Public Health Thailand a number of teenage repeat pregnancy in the three deep-south shown that Pattani has a population of pregnancy in teenager less than Yala and Narathiwat, and the number of teenage repeat pregnancy less than other provinces in the deep south. Although the number of teenage repeat pregnancy smallest amount but this number still above the level specified by the public health policy. This study examines the factors of teenage repeat pregnancy in Pattani province also investigate using appropriate statistical methods.

LITERATURE REVIEW

Numerous relevant literatures have been reviewed comprising three sub-sections, including factors, prevalence of repeat pregnancy and statistical modeling.

Factors

Many previous studies have been revealed that there are many factors affecting the pregnancy in teenagers such as education status, intention, counseling, and contraceptive (before and after delivered). Ketsiri (2016) indicated that there were two types of factors causing repeated pregnancy among teenage mothers. First, the internal factors such as lack of knowledge, the awareness about contraception, and the need for economic support from the father. Second, the external factors, including the support from family, recognition of pregnancy as a status from friends and relatives, and the failure in receiving contraception at the right time. Although teenage repeat pregnancy is not a new phenomenon; however, solving and dealing with the problem continues to be of interest in public health. Lianne et al. (2004) studied the risk factors and life processes associated with teenage pregnancy. According to this study, there were many factors associated with teenage pregnancy including social background factors, family relations, individual factors, and peer relations.

Prevalence of repeat pregnancy

Gavin et al. (2013) studied the patterns of repeat childbearing and postpartum contraceptive use among teens and found that almost 20 percent of teens, aged 15 - 19, have repeat births, and 86 percent of these teens give the second births. Some teens, 13 percent, give birth to a third child, and some other teens (2 percent) give the fourth, and up to the sixth child. According to the Canadian Institute for Health (2009), infants that are born from a repeat teen birth were more often born too soon or too small, leading to health problems for them.

Statistical modeling

Mendis (2018) explained that statistical modeling is the use of statistics for building a representation of the data, and then conducting an analysis to infer the relationship between

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variables or discovering insights in relations to them. The use of statistical modeling is aimed to obtain a general understanding of the data, especially for making predictions. It is a method of mathematically approximating, containing the variables used to explain the relationship between variables. Through hypothesis testing, confidence intervals make inferences, while validating the hypothesis. The classic example of statistical modeling is a regression. It uses variables for finding the effects of each explanatory variable to the independent variables. Statistical modeling has probability spaces, sampling, assumptions, diagnostics, and so on, to come up with inference. Statistical modeling is commonly used for finding insights of data sets.

RESEARCH METHOD

This study focuses on a repeat pregnancy in teenagers who gave birth in hospitals in Pattani province of Thailand in years 2016-2018. The data sources are collected by the Pattani Provincial Health Office.

This study is based on the data obtained from the year 2016 to 2018 recorded from 12 districts in Pattani province by Pattani Provincial Health office, Ministry of Public Health of Thailand. The number of sample size is 2,259 observations with 10 variables, 406 cases were teenage repeat pregnancies and the rest is otherwise. The determinants in this study provide Religion, Age, Districts, Education, Sex education, Intention, Contraceptive before, Contraceptive after and counselling. Teenage repeat pregnancy defined as a pregnancy occurred in a teenager aged 13 to 19 years old. Repeat pregnancy is taken as the outcome interest.

The studied repeated pregnant in teens age of 13 - 19 years old in year 2016 - 2018 is shown in Figure 1. The frequency and percentages will be used for analyses the distribution of sample data. The Chi-squared test will be used for testing the association between each factor and outcome variable.

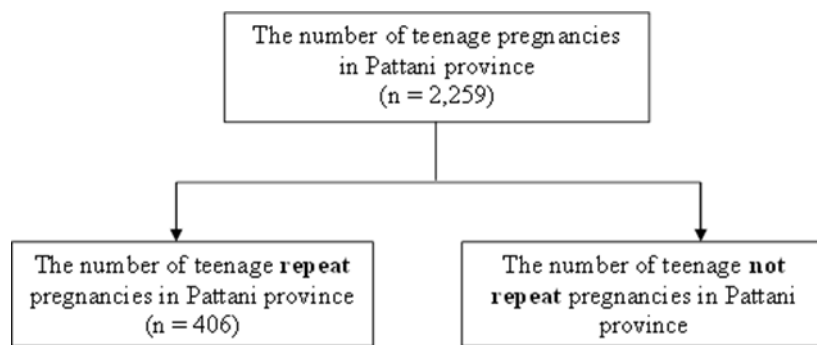


Figure 1: Flow for the sample study

FINDINGS AND DISCUSSION

Univariate analysis provides a first overview of the factors which are affecting teenage repeat pregnancy.

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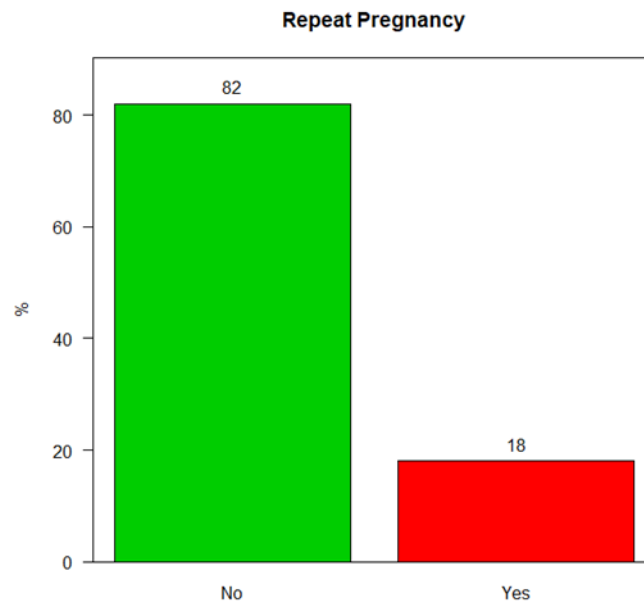


Figure 2: Percentage of teenage repeat pregnancy in Pattani province

From the analysis, it was found that 406 (18%) of the participants be repeat pregnancy and 1,853 (82%) be a not repeat pregnancy is shown in Figure 2.

Table 1: Association of teenage repeat pregnancy

Determinant variables	Repeat Pregnancy		Chi-Square Test	P- value
	Yes (%)	No (%)		
Year			6.42	0.04
- 2016	181 (19.7)	739 (80.3)		
- 2017	127 (18.7)	552 (81.3)		
- 2018	98 (14.8)	562 (85.2)		
Age			93.06	< 0.001
- 13 to 14	2 (4.8)	40 (95.2)		
- 15	6 (5.4)	105 (94.6)		
- 16	11 (4.3)	247 (95.7)		
- 17	55 (12.2)	396 (87.8)		
- 18	126 (22.3)	438 (77.7)		
- 19	206 (24.7)	627 (75.3)		
Religion			12.73	< 0.001
- Islam	352 (17.1)	1709 (82.9)		
- Other	54 (27.3)	144 (72.7)		
Intention			4.54	0.033
- Intended	372 (18.6)	1629 (81.4)		
- Unintended	34 (13.2)	224 (86.8)		

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Determinant variables	Repeat Pregnancy		Chi-Square Test	P- value
	Yes (%)	No (%)		
Districts			20.32	0.041
- Muang Pattani	68 (17.8)	315 (82.2)		
- Khok Pho	53 (24.3)	165 (75.7)		
- Nong Chik	31 (16.9)	152 (83.1)		
- Panare	23 (26.1)	65 (73.9)		
- Mayo	34 (18)	155 (82)		
- Thung Yang Daeng	52 (15.5)	284 (84.5)		
- Sai Buri	29 (15.6)	157 (84.4)		
- Mai Kaen	11 (26.8)	30 (73.2)		
- Yaring	36 (13.5)	230 (86.5)		
- Yarang	43 (17.8)	199 (82.2)		
- Kapho	11 (16.2)	57 (83.8)		
- Mae Lan	15 (25.4)	44 (74.6)		
Education			31.72	< 0.001
- Study	18 (6.2)	274 (93.8)		
- No study	388 (19.7)	1579 (80.3)		
Sex education			2.00	0.157
- Use to study	240 (19)	1024 (81)		
- Never learned	166 (16.7)	829 (83.3)		
Contraceptive (before)			35.83	< 0.001
- Contraception	78 (31.8)	167 (68.2)		
- No contraception	328 (16.3)	1686 (83.7)		
Contraceptive (After)			0.97	0.325
- Contraception	234 (17.3)	1117 (82.7)		
- No Contraception	172 (18.9)	736 (81.1)		
Counselling (After)			63.14	< 0.001
- Received	374 (21.5)	1368 (78.5)		
- Never received	32 (6.2)	485 (93.8)		

Table 1 illustrates the association between demographic factors with the teenage repeat pregnancy using Chi-squared test. There were eight significant variables associated with the outcome, namely, year, age, religion, intention to have a pregnant, district, education, contraceptive use after delivered and having a counseling after delivered. The percentage of repeat pregnancy was highest in 2016 (19.7%). The most of teenage repeat pregnancy was age 19 years old (24.7%). However, when compare the number of teenage repeat pregnancy by religion; it was found that the cases are more likely to occurred in other religion (27.3%). There were 18.6% of teenage repeat pregnancies intended to have a pregnant. Moreover, the highest percentage of repeat pregnancy was in Mai Kan district (26.8%), followed by Panare and Kapho district, respectively. For education status, it was revealed that 19.7% of repeat pregnancies were teenagers who have no study. However, for those who have a repeat pregnancy, 31.8% were have a contraceptive use before pregnant and 21.5% were have a counselling after delivered.

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CONCLUSION AND FURTHER RESEARCH

The association for factors of teenage repeat pregnancy included year, age, religion, intention, district, education, contraceptive and counselling (after delivered) were correlated with teenage repeat pregnancy. And did not found correlation between intention and sex education with teenage repeat pregnancy. A holistic policy and planning approach for preventing and appropriate management for pregnancy in teenagers are essential.

For logistic regression model from the association table those variables which have a p-value result of less than 0.5 was included and full model was created.

Table 2: Last model logistic regression of teenage repeat pregnancy

	Estimate	Std. Error	OR (CI 95%)	p-value
Intercept	-6.12045	0.49324		
Age				< 0.001
- 13-14	0.17322	0.80525	1.19 (0.25,5.76)	
- 15	0.27765	0.52840	1.32 (0.47,3.72)	
- 16	-	-	1	
- 17	1.07629	0.34621	2.93 (1.49,5.78)	
- 18	1.75836	0.33053	5.8 (3.04,11.09)	
- 19	1.85072	0.32535	6.36 (3.36,12.04)	
Religion				< 0.001
- Islam	-	-	1	
- Other	1.06237	0.21970	2.89 (1.88,4.45)	
Districts				0.009
- Muang Pattani	0.63320	0.25712	1.88 (1.14,3.12)	
- Khok Pho	0.65351	0.24954	1.92 (1.18,3.13)	
- Nong Chik	0.21729	0.28356	1.24 (0.71,2.17)	
- Panare	1.04542	0.31652	2.84 (1.53,5.29)	
- Mayo	0.29198	0.26868	1.34 (0.79,2.27)	
- Thung Yang Daeng	0.11458	0.24105	1.12 (0.7,1.8)	
- Sai Buri	0.89307	0.29883	2.44 (1.36,4.39)	
- Mai Kaen	0.51636	0.43717	1.68 (0.71,3.95)	
- Yaring	-	-	1	
- Yarang	0.46394	0.25499	1.59 (0.96,2.62)	
- Kapho	0.05258	0.38777	1.05 (0.49,2.25)	
- Mae Lan	0.75294	0.36422	2.12 (1.04,4.34)	
Education				< 0.001
- Study	-	-	1	
- No study	1.16029	0.28128	3.19 (1.84,5.54)	

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	Estimate	Std. Error	OR (CI 95%)	p-value
Contraceptive (before)				< 0.001
- Contraception	0.76355	0.17476	2.15 (1.52,3.02)	
- No contraception	-	-	1	
Counselling (After)				< 0.001
- Received	1.66518	0.21493	5.29 (3.47,8.06)	
- Never received	-	-	1	

From the last model shows that age, religion, districts, education, contraceptive (before) and counselling after delivered were highly significant (p-value less than 0.05) with a teenage repeat pregnancy. The odds ratio for each variable together with the corresponding 95% confidence intervals shows probability of teenager who age 19 years old is more to be a repeat pregnancy by 6.36 times than teenager who age 16 years old. Similarly, no study in education factor is more to be a repeat pregnancy by 3.19 times than who study, contraception in contraceptive (before delivered) factor is more to be a repeat pregnancy by 2.15 times than who no contraception and received counselling after delivered is more to be a repeat in teenage pregnancy by 5.29 than never received after delivered.

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