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Factors related to the perception of pregnant women regarding antenatal care in Nakonpathom province, Thailand

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ABSTRACT

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A cross-sectional study was conducted to determine perceptions of pregnant women regarding antenatal care (ANC) and their related factors among pregnant women in Nakhonpathom province, Thailand. Data were collected from 227 pregnant women using self-administered questionnaires in January, 2010. Descriptive statistics, Chi-square test and Multiple logistic regression were used for analysis.

Sixty percent of the pregnant women had positive perceptions regarding ANC. By bivariate analysis, factors significantly associated with perception of ANC were education level, marital status, knowledge regarding ANC, family support, accessibility to ANC information, and pregnancy intention (P-value < 0.05). By multiple logistic regression analysis, factors which predicted perceptions on ANC were: knowledge of pregnant women about ANC and accessibility to ANC information. Knowledge (Poor: OR = 9.30, 95% CI = 2.63-32.89, Moderate: OR = 4.53, 95% CI = 2.10-9.76) and fair accessibility of information (OR = 2.12, 95% CI = 1.303-4.38) were significantly associated with negative perceptions of ANC.

The findings of this study suggest that knowledge of ANC should be emphasized and accessibility to information about ANC for pregnant women should be improved to encourage positive perceptions on ANC.

Keywords Perception Antenatal care Pregnant women

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ปัจจัยที่มีความสัมพันธ์กับการรับรู้เกี่ยวกับการให้บริการฝากครรภ์ของหญิงตั้งครรภ์ในจังหวัดนครปฐม ประเทศไทย

บทคัดย่อ

ยูกะ อิโนะ จุฑาธิป ศีลบุตร จิราพร ชมพิกุล. ปัจจัยที่มีความสัมพันธ์กับการรับรู้เกี่ยวกับการให้บริการฝากครรภ์ของหญิงตั้งครรภ์ในจังหวัดนครปฐม ประเทศไทย. ว.สาธารณสุขและการพัฒนา, 2554; 9(2): 105-16.

การศึกษาแบบตัดขวางนี้มีวัตถุประสงค์เพื่อศึกษาการรับรู้เกี่ยวกับการให้บริการฝากครรภ์และปัจจัยที่มีผลต่อการรับรู้เกี่ยวกับการให้บริการฝากครรภ์ของหญิงตั้งครรภ์ในจังหวัดนครปฐม ประเทศไทย โดยเก็บข้อมูลจากหญิงตั้งครรภ์จำนวน 227 คน โดยใช้แบบสอบถามที่สร้างขึ้น และวิเคราะห์ข้อมูลโดยใช้ สถิติเชิงพรรณนา การทดสอบไคว์สแควร์ และการวิเคราะห์ลอจิสติก

การศึกษาพบว่า หญิงตั้งครรภ์ประมาณร้อยละ 60 มีการรับรู้เชิงบวกต่อการให้บริการฝากครรภ์ สำหรับการวิเคราะห์ปัจจัยที่มีผลต่อการรับรู้ของหญิงตั้งครรภ์เกี่ยวกับการให้บริการฝากครรภ์โดยการทดสอบไคว์สแควร์ พบว่า ระดับการศึกษา สถานภาพการสมรส ความรู้เกี่ยวกับการให้บริการฝากครรภ์ และการได้รับการสนับสนุนจากครอบครัวและการเข้าถึงข้อมูลด้านบริการฝากครรภ์ เป็นปัจจัยที่มีผลต่อการรับรู้เกี่ยวกับการให้บริการฝากครรภ์ นอกจากนี้ผลการวิเคราะห์ลอจิสติกแสดงให้เห็นว่าความรู้ในระดับกลาง (OR = 4.53, 95% CI = 2.10-9.76) ระดับความรู้ในระดับต่ำ (OR = 9.30, 95% CI = 2.63-32.89) และการเข้าถึงข้อมูลด้านบริการฝากครรภ์ในระดับกลาง (OR = 2.12, 95% CI = 1.03-4.38) เป็นปัจจัยที่มีความสัมพันธ์กับการรับรู้เกี่ยวกับการให้บริการฝากครรภ์เชิงลบ

ผลการศึกษาชี้ให้เห็นว่าบุคลากรทางสาธารณสุขควรเน้นการให้ความรู้ด้านการให้บริการฝากครรภ์ และเพิ่มช่องทางการเข้าถึงข้อมูลเกี่ยวกับการให้บริการฝากครรภ์ เพื่อให้หญิงตั้งครรภ์มีการรับรู้ในเชิงบวกของการให้บริการฝากครรภ์

คำสำคัญ การรับรู้ การให้บริการฝากครรภ์ หญิงตั้งครรภ์

INTRODUCTION

Maternal and child health programs in Thailand started in 1964 and maternal and child health (MCH) in Thailand has improved greatly since then. The Maternal Mortality Ratio (MMR) and the Infant Mortality Rate (IMR) have fallen dramatically since 1974. Although the IMR for Thailand is lower than the global average, it is still higher than that for some other countries in the same region, such as Singapore and Malaysia[1].

Antenatal care (ANC) is a principal reproductive health care service to help ensure women have healthy pregnancies. Specifically, prenatal care allows for monitoring of pregnancy complications such as low weight which can lead to infant mortality and disabilities. ANC can reduce maternal deaths and mortality rates directly through the detection and treatment of pregnancy related illnesses, and indirectly by the identification of pregnant women at increased risk of delivery complications, and by ensuring that they deliver in a suitable facility. Most formal investigations of the effectiveness of ANC have concentrated on infant outcomes, prenatal mortality, preterm delivery, and low birth weight[2].

In Thailand, 2000-2008, 98% of pregnant women made at least one ANC visit, and 74% of pregnant women made at least four visits[3]. Most ANC is provided in hospitals and health centers by medical and health personnel such as doctors, nurses and midwives. Services provided at ANC clinics include routine physical examinations, voluntary counseling and testing for HIV and Thalassemia, Tetanus Toxoid vaccinations, health education, and the provision of folic acid and iron supplements. All pregnant women are given the MCH handbook on their first ANC visit[4]. Although the prevalence of ANC visits was high in Thailand, the MMR and IMR were still high in some provinces. In Nakhonpathom, the MMR of 35.6 was higher than the country average in 2005, and the IMR of 7.5 was higher than the country average in 2006.

Previous research has been conducted about the utilization of maternal health care services, and perceptions regarding maternal care affecting women's utilization of prenatal services[5]. Increasing positive perceptions of pregnant women regarding ANC may influence the percentage of pregnant women to make ANC visits and improve the state of MCH. Therefore this research focused on factors related to the perceptions of pregnant women regarding ANC in Nakhonpathom, Thailand. This information might be expected to indicate the nature of their disadvantage, to improve ANC, and to enhance the quality of life for mothers and children.

METHODOLOGY

A cross-sectional study was conducted after obtaining approval from the Mahidol University Institutional Review Board Ethics Committee (COA. NO.MU-IRB 2009/293.2611). Multi-stage cluster sampling was used to select three community hospitals. Two hundred and twenty seven Thai pregnant women who attended ANC at three government community hospitals in Nakhonpathom province, Thailand, were collected by self-administered questionnaire from January 11th to January 26th 2010. The self-administered questionnaire included questions about socio-economic status, knowledge regarding ANC, accessibility to ANC, duration of waiting time for ANC, social support, family support, accessibility

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of ANC information, reproductive health history, pregnancy intention and perception. The reliability of the knowledge and perception sections was 0.64 and 0.74 respectively.

Perception of pregnant women regarding ANC was categorized into negative and positive by mean score. Knowledge regarding ANC was classified into three categories: high, moderate and low based on Benjamin Bloom's criteria[6]. The accessibility to information sources was categorized into three groups: easy, fair and difficult. Social support and family support were classified into three groups: good, fair and poor.

Descriptive statistics were used to describe the distribution of all variables. Chi-square test was used to find the association between each independent variables and perceptions of ANC; and Multiple logistic regressions was used to determine the strength of association between the independent variables and perception of ANC.

RESULTS

About 80% of the pregnant women were proper child bearing age (17-35 years old), and 60.62% of them had secondary or high school education. About one third of pregnant women (33.04%) did not have a job, and 85.71% had low family income (Table 1).

With regard to the perception and knowledge of pregnant women regarding ANC, Table 2 show that 59.91% had positive perceptions regarding ANC; nearly 70% had good knowledge about ANC; and more than 90% knew the contents of ANC and the necessity of blood testing during ANC. However, the number of ANC visit was known by 70% of the pregnant women. (Table 3)

Table 1 Frequency and percentage of pregnant women by socio-economic characteristics

Socio-economic factors	Frequency	%
Age (n = 226)		
Younger age (< 17 years old)	22	9.73
Proper child bearing age (17-35 years old)	185	81.86
Elder age (> 35 years old)	19	8.41
Mean = 24.71, SD = 6.73, Min. = 14, Max. = 41		
Education level (n = 226)		
≤ Primary school	72	31.86
Secondary / high school	137	60.62
≥ Diploma	17	7.52
Family size (n = 220)		
≤ 4	128	58.18
> 4	92	41.82
Mean = 4, QD = 1, Min. = 1, Max. = 12		

Table 1 Frequency and percentage of pregnant women by socio-economic characteristics (Cont.)

Socio-economic factors	Frequency	%
Occupation (n = 227)		
No job	75	33.04
Job	152	66.96
Family income (n = 217)		
Low income (500-17,999 baht/month)	186	85.71
High income (18,000-80,000 baht/month)	31	14.29
Median = 9,000, QD = 4,000, Min. = 500, Max. = 80,000		

No answer: Missing value occurred as the participants had their right to skip some questions

Table 2 Frequency and percentage of pregnant women by perception and knowledge of pregnant women About ANC

Variables	Frequency	%
Perception of pregnant women regarding ANC		
Positive	136	59.91
Negative	91	40.09
Knowledge of pregnant women about ANC		
Good	155	68.28
Moderate	47	20.70
Poor	25	11.01

Table 3 Percentage of correct answers by item of knowledge of pregnant women regarding ANC

Knowledge of pregnant women about ANC	Correct answer %
1. ANC is the provision of health services to pregnant women by doctors, nurses, midwives or other health care professionals	89.42
2. Pregnant women should visit ANC for the first time when they feel fetal movement	71.36
3. Pregnant women should attend ANC at least 2 times during pregnancy	70.48
4. Only pregnant women with complications should go to ANC	71.80
5. ANC consists of regular examinations to check the expectant mother's blood pressure, weight, fetal heartbeat, tetanus immunization, iron and folic supplementation	90.74
6. ANC is an opportunity to inform pregnant women about danger signs and symptoms	70.53
7. To protect baby from tetanus, pregnant women should take tetanus vaccination at ANC	81.49
8. Blood testing during ANC is necessary to assess the anaemia status during pregnancy	90.30
9. Pregnant women should attend ANC as soon as they miss their menstrual period	80.61

Most (62.12%) of the pregnant women lived less than 10 kms from the hospitals, and 82.31% used their own vehicle to go to hospital. Nearly 90% of the pregnant women felt that their transportation to visit ANC from their home was convenient and inexpensive. Sixty percent of pregnant women waited more than 30 minute for ANC (Table 4).

Table 4 Frequency and percentage of pregnant women by level of accessibility to ANC, waiting time and accessibility to source of information about ANC

Level of accessibility to ANC	Frequency	%
Distance to hospital (n = 225)		
≤ 10 kms	141	62.67
> 11 kms	84	37.33
Type of transportation (n = 226)		
Own vehicle (bicycle/car/bike) and on foot	186	82.31
Public transportation	40	17.69
Convenience of transportation (n = 226)		
Convenient	212	93.39
Inconvenient	14	6.17
Travel cost (n = 226)		
Expensive	24	10.57
Inexpensive	202	88.99
Duration of waiting time (n = 226)		
≤ 30 minutes	88	38.44
> 30 minutes	138	60.79
Level of accessibility to ANC information (n = 225)		
Good	115	51.11
Fair	102	45.33
Poor	8	3.56

Table 5 Frequency and percentage of pregnant women by level of social support and family support

Items of support	Frequency	%
Level of social support (n = 226)		
Good	112	49.56
Fair	95	42.04
Poor	19	8.41
Level of family support (n = 225)		
Good	169	74.45
Fair	49	21.59
Poor	7	3.08

The result in Table 5 shows that, most (74.45%) of pregnant women had good support from their family and 49.56% from social support. Concerning their reproductive health history, over 70% of the pregnant women had one child. Approximately 62% first visited ANC within the first 12 weeks of pregnancy, and 61.23% planned to have their current pregnancy. (Table 6)

The results of the Chi-square test for association between the independent variables and perception of the pregnant women regarding ANC are shown in Table 7. This research found that education level, marital status, knowledge about ANC, family support, accessibility to ANC information, and pregnancy intention were all statistically significantly associated with perceptions of pregnant women regarding ANC. The pregnant women who had good knowledge about ANC were most likely to have positive perceptions. Those who had poor knowledge were most likely to have negative perceptions. The pregnant women who had good family support had high proportion of positive perceptions (62.72%), and 62.50% of pregnant women with difficulty in accessing information had negative perceptions. Other factors were not significantly associated with the perception.

Table 6 Frequency and percentage of pregnant women by reproductive health history and pregnancy intention

Reproductive health history and pregnancy intention	Frequency	%
Number of children (n = 227)		
1	165	72.69
≥ 2	62	27.31
Median = 1, QD = 1, Min. = 0, Max. = 4		
The timing of ANC for the first visit (n = 221)		
First trimester (< 13 weeks)	136	61.54
Second trimester (13-24 weeks)	69	31.22
Third trimester (> 24 weeks)	16	7.24
Median = 12, QD = 4, Min. = 4, Max. = 38		
The number of ANC visits (n=227)		
≤ 4	92	40.53
> 4	135	59.47
Median = 4, QD = 2, Min. = 1.00, Max. = 12.0		
Pregnancy intention (n = 227)		
Unplanned	46	20.26
Planned	139	61.23
Unclear	42	18.50

The significant factors identified by Chi-square test were further tested by multiple logistic regression to determine which could be significant predictors for the perceptions of the pregnant women as shown in Table 8. The result indicated that level of knowledge and accessibility to ANC information were statistically significantly associated with the perceptions of the pregnant women regarding ANC (P-value < 0.05). After adjusting other factors, pregnant women who had poor levels of knowledge about ANC were 9.30 times more likely to have negative perceptions compared to those with good knowledge levels. Pregnant women who had fair accessibility to ANC information were 2.12 times more likely to have negative perceptions compared with those who had easy accessibility to ANC information.

Table 7 P-value of factors significantly associated with perception of pregnant women regarding ANC

Factors	Positive perception		Negative perception		χ^2	P-value
	n	%	n	%		
Educational level (n = 226)					9.181	0.010*
≤ Primary school	33	45.83	39	54.17		
Secondary/high school	91	66.42	46	33.58		
≥ Diploma	12	70.59	5	29.41		
Marital status (n = 225)					4.180	0.041*
Married	97	64.24	54	35.76		
Unmarried	37	50.00	37	50.00		
Knowledge (n = 227)					44.265	<0.001*
Good	115	74.19	40	25.81		
Moderate	17	36.17	30	63.83		
Poor	4	16.00	21	84.00		
Family support (n = 225)					6.637	0.036*
Good	106	62.72	63	37.28		
Moderate	29	59.18	20	40.82		
Poor	1	14.29	6	85.71		
Accessibility to ANC **Informations (n = 225)**					8.833	0.012*
Easy	80	69.57	35	30.43		
Fair	53	51.96	49	48.04		
Difficult	3	37.50	5	62.50		
Pregnancy intention (n = 227)					6.901	0.032*
Unplanned	27	58.70	19	41.30		
Planned	91	65.47	48	34.53		
Unclear	18	42.86	24	57.14		

*Significant at P-value < 0.05

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Table 8 Adjusted odds ratio from multiple logistic regression of perception of pregnant women by selected factors

Factors	Negative perception about ANC			
	Adj.Odds ratios	95% CI for OR		P-value
		Lower	Upper	
Level of knowledge				
Good	1.00			
Moderate	4.53	2.10	9.76	<0.001**
Poor	9.30	2.63	32.89	0.001**
Level of Accessibility to ANC informations				
Easy	1.00			
Fair	2.12	1.03	4.38	0.042*
Difficult	2.47	0.37	16.40	0.348

*Significant at P-value < 0.05 **Significant at P-value < 0.01

DISCUSSION

In this study, more than half of the pregnant women had positive perceptions regarding ANC. The result showed that highly educated pregnant women were more likely to have a positive perception about ANC than poorly educated pregnant women. This may be because that those with high education levels understood about ANC better than those with low education levels. They could better consider the benefits of ANC for their health and their babies. The result was supported by the previous research conducted by Dat[6] who also concluded that educated women were more likely to have positive perceptions of maternal health services and their benefits. The result was also consistent with the research of Greetsen[8] who found that there was a significant association between marital status and the perceptions of the pregnant women. Married women were more likely to have positive perceptions. This maybe because married pregnant women can receive more support from their husbands.

Most of the pregnant women had good knowledge about ANC. The result also shows a significant association between knowledge about ANC and perception regarding ANC (P-value < 0.001). Those who had poor or moderate level of knowledge were more likely to have negative perception compared with those who had good levels of knowledge. The result was similar to the finding from the study of Effendi[9], that well informed women knew about the benefits of ANC for their health and their babies' health.

Accessibility of information about ANC had a significant association with the perceptions of the pregnant women regarding ANC. Those who had fair access to ANC information were more likely to

have negative perceptions compared with those who had easy access. This is consistent with the study of Siharath et al.[10] who also concluded that the accessibility to information affected the perception.

Family support had a significant association with the perceptions of the pregnant women regarding ANC. More than 60% of the pregnant women received a high supports from the husbands in terms of advising for regular check-ups, and sharing information of ANC. However, a quarter of the pregnant women's husbands had never participated in training organized by hospital. This might be due to lack of time. About 60% of the pregnant women had planned for their current pregnancy, and 20.26% of them had not. There was a statistically significant association between intention to become pregnant and perception regarding ANC. Those who had planned to have their current pregnancy were most likely to have positive perceptions. This may be because those who had intented their pregnancies made greater efforts to have good health and healthy infants. They were more willing to have ANC and receive information provided at ANC visits, or other material about taking care of their health and their infant's health. The finding is supported by the report of the Oklahoma State Department of Health[11] that unintended pregnancies result in adverse health outcomes for mothers and infants.

Regarding to multiple logistic regression, it revealed that knowledge about ANC and accessibility to information on ANC were only found significantly associated with perceptions of women. It indicated that knowledge of the pregnant women and accessibility to information on ANC were determinant factors and strongly influenced their perception of ANC. Pregnant women were likely to find the necessary and reliable information in material which provided at ANC visit such as the MCH handbook, posters, and brochures. Those information supported pregnant women to have correct understanding about ANC and MCH, and make them have good knowledge and positive perception.

RECOMMENDATIONS

Based on the findings of this study, some recommendations might be beneficial in improving the impact of ANC and MCH. The result of this study shows that knowledge impacted on the perception of pregnant women regarding ANC. Therefore health staff should provide information diligently. Materials such as the MCH handbook, posters and brochures about MCH and specifically about pregnancy are useful to explain more clearly or give more information about MCH. Regarding family support, husbands and relatives have an influence on the perceptions of pregnant women. Therefore health education should not only provide pregnant women, but also their family members. The motivation among family members should be involved in training organized by hospitals through "parent school", and they should be given not only on weekdays but also on weekends.

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