

## Factors Associated with Inadequate Antenatal Care of Pregnant Women Delivered in Ratchaburi Hospital ปัจจัยที่มีความสัมพันธ์กับการฝากครรภ์ไม่ครบตามเกณฑ์ ของหญิงตั้งครรภ์ที่มาคลอดบุตรที่โรงพยาบาลราชบุรี

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### ABSTRACT

**Objective:** The purpose was to evaluate the associated factors for inadequate antenatal care (ANC) of pregnant women delivered in Ratchaburi Hospital.

**Methods:** A total of 400 pregnant women delivered in Ratchaburi Hospital from 1 January to 30 September 2019 were participated in case-control study. Research instrument was a questionnaire consisting of demographic characteristics, knowledge, attitude, and satisfaction. The data were analyzed by binary logistic regression model of odds ratios.

**Results:** One hundred and eighty (45%) of the participants were inadequate ANC. Most of them were between the ages of 20 and 35, secondary level of education, having low monthly income, multiparous, and low-risk pregnancy group. Inadequate ANC was significantly higher for mothers with separated marital status, no education, low monthly income, multiparous, and no history of high-risk pregnancy. The knowledge, attitude, and satisfaction in both groups were high and did not show difference.

**Conclusion:** Separated marital status, low education, low monthly income, multiparous, and no history of high-risk pregnancy were associated with inadequate antenatal care.

**Keywords :** inadequate antenatal care , pregnancy

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## บทคัดย่อ

**วัตถุประสงค์:** เพื่อศึกษาปัจจัยที่มีความสัมพันธ์ต่อการฝากครรภ์ไม่ได้คุณภาพในหญิงตั้งครรภ์ที่มาคลอดในโรงพยาบาลราชบุรี

**วิธีการศึกษา:** เป็นการศึกษาแบบควบคุมในหญิงตั้งครรภ์จำนวน 400 ราย ที่มารับบริการคลอดยังโรงพยาบาลราชบุรีในช่วง 1 มกราคม - 30 กันยายน 2562 เครื่องมือที่ใช้วิจัย ได้แก่ แบบสอบถามจากการสัมภาษณ์ประกอบด้วยข้อมูล 4 ส่วน คือ ข้อมูลทั่วไป แบบวัดความรู้ เจตคติเกี่ยวกับการฝากครรภ์ และความพึงพอใจต่อการบริการ วิเคราะห์ข้อมูลโดยใช้สถิติวิเคราะห์ในโปรแกรมสำเร็จรูป

**ผลการศึกษา:** จากการศึกษาพบหญิงตั้งครรภ์จำนวน 180 ราย (ร้อยละ 45) มาฝากครรภ์ไม่ครบตามเกณฑ์ ส่วนใหญ่มีอายุอยู่ในช่วง 20-35 ปี การศึกษาระดับมัธยม รายได้ต่อเดือนต่ำ มีบุตรหลายคน และไม่มีประวัติความเสี่ยงสูงต่อการตั้งครรภ์ พบความสัมพันธ์ของการมาฝากครรภ์ไม่ครบตามเกณฑ์ในมารดาที่มีสถานะแยกทางกันกับสามี การศึกษาต่ำ รายได้ต่ำ มีบุตรหลายคน และเป็นครรภ์ที่มีความเสี่ยงต่ำ อย่างมีนัยสำคัญทางสถิติ โดยการศึกษาพบว่า สตรีทั้งสองกลุ่มที่มาฝากครรภ์ครบและไม่ครบตามเกณฑ์ มีความรู้ เจตคติ ความพึงพอใจต่อการรับบริการค่อนข้างสูง และไม่แตกต่างกัน

**สรุป:** มารดาสถานะหย่าร้าง การศึกษาต่ำ รายได้ต่ำ มีบุตรหลายคน และเป็นครรภ์ที่มีความเสี่ยงต่ำ เป็นปัจจัยที่มีความสัมพันธ์ต่อการมาฝากครรภ์ไม่ครบตามเกณฑ์

## คำสำคัญ : การฝากครรภ์ ฝากครรภ์ไม่ครบตามเกณฑ์

วารสารแพทย์เขต 4-5 2563 ; 39(4) : 648-654.

## Introduction

Antenatal care (ANC) also known as prenatal care, can essentially prevent women of pregnancy and childbirth-related morbidities and mortality if appropriately utilized<sup>1</sup>. Globally, 287,000 women die of pregnancy-related complications annually, with 99% of it occurred in the developing world<sup>2</sup>. A Cochrane review showed that women in prenatal care programs with reduced numbers of visits had a borderline significant increase in perinatal mortality compared to women receiving standard prenatal care (RR 1.14; 95% CI 1.00-1.31)<sup>3</sup>.

In the developed world, 98% of pregnancy women receive antenatal care at least once,

while in the developing world, attendance of ANC is as low as 68%<sup>4</sup>. ANC is one of the key strategies for reducing maternal and neonatal morbidity and mortality. The timing of the first ANC visit as well as the total number of ANC visits also affect the quality of ANC. The under-attending of the recommended ANC service may lead to adverse pregnancy outcomes.<sup>5,6</sup>

Recently, 48.5% of pregnancy women receive adequate ANC in Thailand<sup>7</sup>. The author aimed to examine factors associated with inadequate antenatal care of pregnant women delivered and provide useful information to design appropriate ANC services.

## Objective

This study would like to find the prevalence of mothers who received inadequate antenatal care and evaluate the associated factor for inadequate antenatal care of pregnant women delivered in Ratchaburi Hospital.

## Methods

### Study design and population

One to one ratio of unmatched case-control study design was used to investigate factors associated inadequate ANC. Thai and term pregnancy women (total=400) who were delivered in Ratchaburi Hospital from 1 January to 30 September 2019, were recruited. Pregnancy women who attended ANC after 12 weeks of their gestational age were considered inadequate ANC as a case group (n=180). Pregnancy women who attended ANC before or at 12 weeks and had at least five visits of their gestational age were considered adequate ANC as a control group (n=220).

### Measurements

The questionnaire was proved from three professors with coefficient alpha by Cronbach's method. The questionnaire composed of four major parts: 1) demographic characteristics, 2) obstetrical and ANC knowledge, 3) pregnancy attitude, and 4) satisfaction to hospital service. The questionnaire was pretested by 10% of the total sample size. The data were collected after birth at post-partum ward.

## Data analysis

Data were analyzed using SPSS version 22.0 for windows. Percentage, mean, and standard deviation were used to describe personal characteristics of both study groups. Chi-square test was conducted to determine the statistical significance of group differences.

Bivariate binary logistic regression method of odds ratios was employed to compare which variables were relatively strong among the considered possible factors. P-value < .05 was statistic significant.

## Results

The present study recruited four hundred pregnant women who were delivered in Ratchaburi Hospital from 1 January to 30 September 2019. One hundred and eighty (45%) were inadequate ANC attendance. Most of them were 20-35 years old (56.1%), married (88.3%), having secondary level of education (50%), having monthly income less than thirty hundred baht (88.8%), multiparous (68.9%), and no history of high-risk pregnancy (72.2%).

Bivariate analysis showed that separated marital status, no education, low monthly income, multiparous, and no history of high-risk pregnancy had statistically significant association with inadequate ANC attendance (Table 1).

**Table 1** Demographic characteristics factors of the participants (N=400)

| Characteristics             | Inadequate ANC<br>case=180<br>N (%) | Adequate ANC<br>control=220<br>N (%) | P-value |
|-----------------------------|-------------------------------------|--------------------------------------|---------|
| - Age (year)                |                                     |                                      |         |
| Less than 20                | 40 (22.2)                           | 33 (15.0)                            | .071    |
| 20-35                       | 101 (56.1)                          | 140 (63.6)                           | .133    |
| More than 35                | 39 (21.7)                           | 47 (21.4)                            | .999    |
| - Marital status            |                                     |                                      |         |
| Currently married           | 159 (88.3)                          | 214 (97.3)                           | .009    |
| Separated                   | 21 (11.7)                           | 6 (2.7)                              | <.001   |
| - Education                 |                                     |                                      |         |
| No education                | 16 (8.9)                            | 4 (1.8)                              | .001    |
| Primary                     | 41 (22.8)                           | 34 (15.5)                            | .071    |
| Secondary                   | 90 (50.0)                           | 107 (48.6)                           | .999    |
| Bachelor's degree or higher | 33 (18.3)                           | 75 (34.1)                            | <.001   |
| - Monthly income (baht)     |                                     |                                      |         |
| Less than 10,000            | 80 (44.4)                           | 60 (27.3)                            | <.001   |
| 10,000-30,000               | 80 (44.4)                           | 101 (45.9)                           | .999    |
| More than 30,000            | 20 (11.2)                           | 59 (26.8)                            | <.001   |
| - Parity                    |                                     |                                      |         |
| Primiparous                 | 56 (31.1)                           | 96 (43.6)                            | .010    |
| Multiparous                 | 124 (68.9)                          | 124 (56.4)                           | .010    |
| - High-risk pregnancy       |                                     |                                      |         |
| Yes                         | 50 (27.8)                           | 63 (28.6)                            | .999    |
| No                          | 130 (72.2)                          | 157 (71.4)                           | .999    |

Four hundred pregnant women had high obstetric-ANC knowledge, pregnancy attitude, and satisfaction to hospital service in both case-control groups.

The multivariate binary logistic regression analysis indicated that no statistically significant

association of obstetric-ANC knowledge, pregnancy attitude, and satisfaction to hospital service between both groups (Table 2).

Table 2 Knowledge, attitude and satisfaction factors in 400 pregnant women

| Characteristics | Inadequate ANC<br>case=180<br>N (%) | Adequate ANC<br>control=220<br>N (%) | P-value |
|-----------------|-------------------------------------|--------------------------------------|---------|
| - Knowledge     |                                     |                                      |         |
| Low             | 17 (9.4)                            | 20 (9.1)                             | .999    |
| Medium          | 47 (26.2)                           | 44 (20.0)                            | .157    |
| High            | 116 (64.4)                          | 156 (70.9)                           | .185    |
| - Attitude      |                                     |                                      |         |
| Low             | 13 (7.2)                            | 11 (5.0)                             | .386    |
| Medium          | 53 (29.4)                           | 59 (26.8)                            | .617    |
| High            | 114 (63.4)                          | 150 (68.2)                           | .264    |
| - Satisfaction  |                                     |                                      |         |
| Low             | 10 (5.6)                            | 9 (4.1)                              | .617    |
| Medium          | 65 (36.1)                           | 64 (29.1)                            | .157    |
| High            | 105 (58.3)                          | 147 (66.8)                           | .083    |

Discussion

This study showed 45% of inadequate ANC among the participants and found the association with separated marital status, low education level, poor income, and multiparous. This is consistent with the result of a previous study.<sup>8-13</sup>

The present study found that higher level of education of the pregnant women was positively associated with adequated ANC. This is possibly because education gives an opportunity for mothers to make better income able to afford the cost, to develop greater marital status, and to make better choice their own health as well as their children.<sup>12-15</sup>

Contrary to previous research finding that the obstetric knowledge, pregnancy attitude,

and satisfaction in hospital service were found no association with inadequate ANC attendance.<sup>14-16</sup>

The author found that the distance from home to the hospital was no correlated with inadequate ANC. Mostly pregnant women have never known the important to the first ANC visit before gestational age 12 weeks and the activity about antenatal care promotion in Ratchaburi Province has shown very few (only 15 %). This study will serve as an important reference in providing information for policy programs to improve early ANC initiation.

Conclusion

Separated marital status, low education, low monthly income, multiparous, and no history

of high-risk pregnancy were found to have significant association with inadequate antenatal care in our hospital. Encouragement ANC program policy may be attributed to the reduced inadequate ANC.

### Limitation

The study was included high-risk pregnancy would somehow increase the number of ANC visits and the data were collected in post-partum ward might have compromised the generalizability of the findings to some degree of response bias. The information about perinatal morbidity and mortality were lacking in this study.

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