

Predisposing, Enabling, and Reinforcing Factors and Depression among Pregnant Women in a North-Eastern Province of Thailand

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Date received: 11 Nov 2020

Date revised: 2 Mar 2021

Date accepted: 12 Mar 2021

Abstract: Depression is globally prevalent and above 25% of women experience antenatal depression. Several factors have been associated with depression among pregnant women, but few research about prevalence and related factors has been carried out in Thailand. This study was aimed to investigate factors related to depression among pregnant women in a north-eastern province of Thailand. There were 112 pregnant women from hospitals in a north-eastern province in Thailand were selected using cluster randomization. The depression screening tool created by the Ministry of Public Health was used (i.e., 2-question tool). Socio-demographic, predisposing, reinforcing and enabling factors were measured in relation to depression. Descriptive statistics were performed and inferential statistics (i.e., Chi-square and Fisher's exact tests) were used at a 0.05 significant level. About 18% of participants aged less than 20 years old, and most of participants were married and lived with their husband. About one-third of participants had education less than high school, and had no work during pregnancy. The majority of participants had a high level of knowledge, of attitude, and low level of perception about their mental health during pregnancy. They had high levels of support from family and husband, from colleagues, and from healthcare professionals. The prevalence of depression among pregnant women was 17.8%. Predisposing (i.e., attitude towards mental health during pregnancy) and reinforcing factors (i.e., support from family and friends, and from colleagues) were related to depression among participants ($p < .05$), whereas no enabling factors were related to antenatal depression. Attitude adjustment and prevention of depression among pregnant women need consideration, and support of women during pregnancy could enhance mental health well-being. Constructing mental health intervention towards pregnant women and their family members is recommended.

Keywords: depression; factor; pregnant women; Thailand

Introduction

Depression is the most common mental health problem among women⁽¹⁾, which could occur above 40% during pregnancy and 10% after childbirth.^(2,3) Antenatal depression among women could contribute to risks of parental suicide, child's malfunction⁽¹⁾, and having a low quality of life in the future.⁽⁴⁾

The magnitude of antenatal depression varies according to times of pregnancy and nations. In the first trimester of pregnancy, the prevalence rate of antenatal depression is about 7%, while in the last trimester of pregnancy could reach up to 20%.⁽⁵⁾ Pregnant women could also experience symptoms of depression at a higher rate, for example, 45% in Iran.⁽¹⁾ In addition, antenatal depression is more prevalent in Asian countries comparing to western countries⁽⁶⁾, and the late pregnancy is found to be a critical period of having depression among women.⁽⁷⁾ Previously, the prevalence of antenatal depression in a north-eastern province in Thailand was more than 45% in 2018.⁽³⁾

There are many risk factors related to antenatal depression among women, including predisposing, enabling, and reinforcing factors. Predisposing factor related to antenatal depression are age^(6,8), education⁽⁹⁾, having debt, and unplanned pregnancy.⁽⁷⁾ Whilst complication during pregnancy is an enabling factor for being depressed among pregnant women⁽⁷⁾ and social support from partner and family⁽⁸⁾ are reinforcing factors for antenatal depression.

Early detection and screening for depression during pregnancy in routine antenatal care (ANC) should be promoted.⁽⁷⁾ In Thailand, the prevalence rate of experiencing antenatal depressive symptoms among women ranges between 21% and 46%^(3,10), and attitude regarding pregnancy, irritable moods before

menstruation⁽¹⁰⁾, teenagers, insufficient money during pregnancy are its associated factors in late pregnancy.⁽³⁾ Currently, Thai pregnant women are offered ANC free of charge at registered hospitals. Maternal depression screening has been implemented with a depression screening tool (i.e., 2Q).⁽¹¹⁾ The 2Q developed by the ministry of public health has been tested in general population with the sensitivity and specificity for depression of 73 and 90, respectively.⁽¹²⁾ To our knowledge, estimation of the magnitude of antenatal depression among women and its related factors remain unclear in the north-eastern region of Thailand. Results from the study might be beneficial in designing of preventive program, in order to improve mental health of pregnant women, which is connected to the third goal of the sustainable development goals.⁽¹³⁾ The main aim of the study was to investigate the predisposing, enabling, and reinforcing factors related to antenatal depression among north-eastern Thai women.

Material and methods

Study setting and participants

This was a cross-sectional study carried out in a north-eastern province of Thailand. The selected province has 12 districts with above 700,000 total population and has approximately 6,000 annual child-births.⁽¹⁴⁾

Target population were pregnant women in the province. The number of samples was calculated by using an equation for population proportion estimation⁽¹⁵⁾, with $N=6,003$, $Z=1.96$, $e=0.05$, and $p=0.08$.

$$n = \frac{NZ^2\alpha_2 p(1-p)}{e^2(N-1) + Z^2\alpha_2 p(1-p)}$$

At least 112 pregnant women were required. There were four clusters of hospitals in the province and one hospital from each cluster was selected by using a cluster sampling method. The four selected hospitals demonstrated similarity between clusters and difference within clusters. Thereafter, pregnant women who received antenatal care clinics (ANC) at the selected hospitals at the data collection time were consecutively recruited for the study.

Procedure

The study plan was approved by the head of public health provincial office, and directors of the four hospitals allowed for data collection. Thereafter, the researchers (PB and SW) approached pregnant women at ANCs of the hospitals asking for participation voluntarily. All participants received both verbal and written information about research aim and their rights before signing a consent form at the ANCs they received maternal care. Inclusion criteria were pregnant women who received antenatal care at selected hospitals at the time of data collection and were Thais. Exclusion criteria were those who did not willing to participate in the study or not having ability to read Thai. Each participating woman completed the questionnaire by themselves in a room of an ANC for about 30 minutes. PB, NP and SW checked the completeness of the questionnaire after participating women finished answering the questionnaire.

Instrument

Data were collected using a questionnaire. The questionnaire consisted of five parts. It was tested before data collection for content validity by three experts, and internal consistency by pregnant women in another province, with the Cronbach's alpha coefficient=0.72.

Part I: Socio-demographic characteristics. This part was constructed by the researchers. It consists of questions about age, marital status, education, occupation and underlying disease.

Part II: Predisposing information. The researchers created questions about family type, knowledge, attitude and perception about mental health during pregnancy. The family type has two choices (nuclear and extended families), and the knowledge section had 12 questions where each question provides a score of 0-1 and the total possible score is classified to low (score <8) and high (score 8-12) knowledge about the participants' own mental health during pregnancy. The attitude section had six questions scoring 1-4 in each question, the total possible score was 6-24, and the cut-off score 12 defined low and high attitude towards mental health of the women during pregnancy. The perception section had five questions, each question could generate a score zero and one, a total score <3 was classified as low and three or more was classified as high perception of mental health during pregnancy.

Part III: Enabling information. This part contained five questions about working place, working time, accessibility to mental health services, distance from participants' house to ANC, and residential area.

Part IV: Reinforcing information. This part has 32 questions focusing on social support from family and husband, from colleagues, and from healthcare professionals. The social support from family and husband had 18 questions, each question scored zero or one, resulting in a total possible score of 18. A score of less than ten, 10-14, and 15-18 was categorized as low, middle, and high social support from family and friends, respectively. Social support from colleagues

section had eight questions and from healthcare professionals section had five questions, each question had a possible score of zero or one. Each section was divided into low and high social support, while low support from colleagues was having a score <7 and low support from healthcare professions was having a score <6.

Part V: Depression screening questionnaire. It is a two-question depression screening questionnaire constructed by the ministry of public health in Thailand. (11) Each question has two choices, Yes or No. Yes was scored one and No was scored zero. Having depression was defined if a total score was one or two.

Statistical analyses

Data were entered and analysed by using an instance program. Descriptive statistics for continuous data, such as mean and standard deviation (SD), and categorical data, such as frequency were performed. The association between all independent factors (i.e., parts I to IV) and depression (part V) were assessed

by using the Chi-square and Fisher's exact tests, and a 0.05 significance level was used. All independent factors and depression were considered as categorical data for the Chi-square and Fisher's exact tests.

Results

In total, 112 pregnant women participated in this study. There were 18.8% aged less than 20 years old and most of participants (92.8%) were married and lived with their husband. More than one-third of participants had an education degree lower than high school (36.6%) and had no work (31.2%). A majority of participants were in extended family (65.2%). The majority of participants had a high level of knowledge (79.5%), of attitude (82.2%), and low level of perception (64.3%) about their mental health during pregnancy. The participants had high levels of support from family and husband (67.9%), from colleagues (51.8%), and from healthcare professionals (80.4%).

The prevalence of antenatal depression among

Table 1 Sociodemographic characteristics, predisposing, reinforcing, and enabling factors, and depression status among participants in the study

	Characteristics	N	%	Mean	SD
Age	Less than 20 years	21	18.8	25.6	6.6
	20 years or more	91	81.2		
Marital status	Married and lived with husband	104	92.8		
	Married but not lived with husband	8	7.2		
Education	Lower than high school	41	36.6		
	High school or higher	71	63.4		
Occupation	No work	35	31.2		
	Daily-workers	21	18.8		
	Housewives	20	17.8		
	Agriculturists	18	16.1		
	Others (merchants, students, government workers)	18	16.1		

Table 1 Sociodemographic characteristics, predisposing, reinforcing, and enabling factors, and depression status among participants in the study (cont.)

Characteristics		N	%	Mean	SD
Family type	Nuclear family	39	34.8		
	Extended family	73	65.2		
Knowledge about mental health during pregnancy	Low	23	20.5	9.4	1.4
	High	89	79.5		
Attitude about mental health during pregnancy	Low	20	17.8	18.1	2.8
	High	92	82.2		
Perception about mental health during pregnancy	Low	72	64.3		3.3 0.8
	High	40	32.7		
Social support from family and husband	Low	8	7.1	15.3	2.8
	Middle	28	25.0		
	High	76	67.9		
Social support from colleagues	Low	54	48.2	6.3	1.7
	High	58	51.8		
Social support from healthcare providers	Low	22	19.6	5.7	0.8
	High	90	80.4		
Having an underlying disease		6	5.4		
Working at home		56	50.0		
Daylight working time (8.00–16.00)		72	64.3		
Having experiences to mental health service		9	8.0		
Short distance to antenatal care clinic (<10 kms)		104	92.8		
Rural residential areas		82	73.2		
Having depression		20	17.8	0.2	0.1

participating women was 17.8% (Table 1).

The study revealed that attitude towards mental health during pregnancy, support from family and husband, and from colleagues were related to antenatal depression of the participants, p-value <0.05. Other factors were not statistically related to antenatal depression of the participants. Data are showed in Table 2.

Discussion

This study revealed that the prevalence of depression among pregnant women in a north-east province of Thailand was 17.8%, which was quite consistent with other studies in the last decade.^(5,10) Generally, Asian countries might have higher prevalence of antenatal mental disorders (including depression) in comparison to western countries.^(6,16) The low prevalence of antenatal depression in the study might be a result from actions from the ministry of public health of Thailand during the last decade, such as mental

Table 2. Factors related to depression among the participants

Characteristics	Depression				χ^2	p-value
	Yes		No			
	No.	%	No.	%		
Attitude towards mental health during pregnancy					4.008	0.009*
Low	8	40.0	12	60.0		
High	12	13.0	80	87.0		
Social support from family and husband					16.935	0.027*
Low	5	62.5	3	37.5		
Middle	8	28.6	20	71.4		
High	7	9.2	69	90.8		
Social support from colleagues					4.628	0.031*
Low	14	25.9	40	74.1		
High	6	10.3	52	89.7		

* a significant level at 0.05

health promotion and depression prevention among pregnant women.⁽¹⁷⁾ Therefore, primary and secondary prevention, particularly screening depression using a standardised tool needs nation-wide implementation in order to prevent negative life situation and depression.^(3,18-20)

Attitude towards mental health during pregnancy was only the predisposing factor found in this study. Pregnant women who had low attitude might have a greater chance of being depressed. The finding is in line with a previous study in southern Thailand, that attitude during pregnancy was a key factor for antenatal depression among women.⁽¹⁰⁾ In order to improve mental health among pregnant women, appropriate intervention programs to women during pregnancy by experienced healthcare professionals is further consideration.⁽²¹⁻²²⁾

Reinforcing factors related to depression found in this study were support from family members and

husband, and from colleagues. High support from family members and colleagues is found to be a protective factor for depression⁽⁸⁾, stress⁽²³⁾, and anxiety.⁽¹⁶⁾ In Thailand, the extended family remains happened, particularly in the north-eastern region.⁽³⁾ It has also been seen in this study that the participants lived in an extended family and lived with their husband. This is the reason why social support was related to depression, and pregnant women with well supported were less likely to get depression. Strengthen family might help women during pregnancy not only reducing the stress⁽²³⁾, but also reducing postpartum maternity blue⁽²⁴⁾ and depressive symptoms. Hence, this should be continuously promoted in Thai society.

This study followed research methodology. Calculation the number of samples, and sampling method could maintain the representation of the population. The questionnaire has been tested for the contents and the internal consistency, with acceptable

scores. Although 2-Q is not a worldwide-used tool, it has previously been validated against the standard diagnosis. Screening tools could not compensate clinical diagnosis, over- or under-estimation could be found in this study. In addition, as this is a cross-sectional study, a cause-effect relationship could be a limitation. Also, some influencing factors had not been investigated, e.g., gestational weeks and complications during pregnancy. These might be other factors related to antenatal depression. Finally, due to a small number of depression cases, this might affect in determining risk factors.

Conclusion

The study revealed that predisposing and reinforcing factors were related to depression among women during pregnancy. These include attitude towards mental health during pregnancy, support from family and husbands, and from their colleagues. Pregnant women need to screen and prevent depression. Attitude adjustment needs to be taken into account. Support women during pregnancy from family members and colleagues may enhance better mental health well-being. Constructing mental health intervention towards pregnant women and pregnant women's family members is recommended.

Acknowledgement

The authors would like to thank all pregnant women who participated in the study, and the head of Public Health Provincial office and directors of hospitals where the research carried out. Further, the authors would like to thank the head of organizations where the author work for supporting and letting the authors did the research and wrote the research

findings.

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บทคัดย่อ: ปัจจัยนำ ปัจจัยเอื้อและปัจจัยเสริมกับภาวะซึมเศร้าในหญิงตั้งครรภ์ในจังหวัดหนึ่งของภาคตะวันออกเฉียงเหนือของไทย

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วารสารวิชาการสาธารณสุข 564;30(เพิ่มเติม 3):S432-S440.

ภาวะซึมเศร้าสามารถพบได้ทั่วโลก โดยมากกว่าร้อยละ 25 ของหญิงตั้งครรภ์ประสบปัญหาภาวะซึมเศร้า ซึ่งเกิดจากปัจจัยหลาย ๆ อย่างที่สัมพันธ์กับภาวะซึมเศร้าในหญิงระหว่างตั้งครรภ์ อย่างไรก็ตามการศึกษาเกี่ยวกับความชุกและปัจจัยที่เกี่ยวข้องกับภาวะซึมเศร้าในหญิงตั้งครรภ์ยังมีการศึกษาในประเทศไทยค่อนข้างน้อย การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับภาวะซึมเศร้าในหญิงตั้งครรภ์ในจังหวัดหนึ่งในภาคตะวันออกเฉียงเหนือ กลุ่มตัวอย่างคือหญิงตั้งครรภ์จำนวน 112 คนที่ได้มาจากการสุ่มตัวอย่างแบบกลุ่มจากโรงพยาบาลในจังหวัดหนึ่งของภาคตะวันออกเฉียงเหนือ เครื่องมือในการเก็บข้อมูล คือแบบวัดภาวะซึมเศร้า 2 คำถามซึ่งพัฒนาโดยกระทรวงสาธารณสุข และแบบสอบถามเกี่ยวกับข้อมูลทั่วไป เศรษฐฐานะ ปัจจัยนำ ปัจจัยเอื้อและปัจจัยเสริมที่เกี่ยวข้องกับภาวะซึมเศร้าของผู้ตอบแบบสอบถาม ใช้สถิติเชิงพรรณนาและสถิติเชิงอนุมาน คือ สถิติไคว์สแควร์และฟิชเชอร์ ที่ระดับความเชื่อมั่น 0.05 ผลการศึกษาพบว่า ประมาณร้อยละ 18 ของกลุ่มตัวอย่างอายุต่ำกว่า 20 ปี ส่วนใหญ่แต่งงานและอาศัยอยู่กับสามี ประมาณหนึ่งในสามของกลุ่มตัวอย่างมีการศึกษาต่ำกว่ามัธยมศึกษาตอนปลายหรือเทียบเท่า และขณะตั้งครรภ์ไม่ได้ประกอบอาชีพ กลุ่มตัวอย่างส่วนใหญ่มีความรู้และเจตคติอยู่ในระดับสูง การรับรู้เกี่ยวกับภาวะสุขภาพจิตของตนเองขณะตั้งครรภ์อยู่ในระดับต่ำ ได้รับการสนับสนุนจากครอบครัวและสามี จากเพื่อนร่วมงาน จากบุคลากรทางสาธารณสุขในระดับสูง จากการวิเคราะห์ข้อมูลพบว่าความชุกของภาวะซึมเศร้าในหญิงตั้งครรภ์คิดเป็นร้อยละ 17.8 โดยปัจจัยนำคือ เจตคติเกี่ยวกับสุขภาพจิตของตนเองขณะตั้งครรภ์ ปัจจัยเสริม คือ การสนับสนุนจากครอบครัว เพื่อน และเพื่อนร่วมงาน มีความสัมพันธ์กับภาวะซึมเศร้าของหญิงตั้งครรภ์ อย่างมีนัยสำคัญทางสถิติ แต่ไม่พบความสัมพันธ์ระหว่างปัจจัยเอื้อกับภาวะซึมเศร้าของหญิงตั้งครรภ์ ควรมีการปรับเจตคติและการป้องกันภาวะซึมเศร้าในหญิงตั้งครรภ์ และการสนับสนุนหญิงในระหว่างตั้งครรภ์จะช่วยส่งเสริมสุขภาพจิตของหญิงตั้งครรภ์ นอกจากนี้ควรมีการพัฒนาโปรแกรมส่งเสริมสุขภาพจิตในหญิงตั้งครรภ์ร่วมกับสมาชิกในครอบครัวของหญิงตั้งครรภ์ต่อไป

คำสำคัญ: ภาวะซึมเศร้า; ปัจจัย; หญิงตั้งครรภ์; ไทย