

ความคาดหวังและความรู้ต่อการตรวจคลื่นเสียงความถี่สูงของสตรีตั้งครรภ์ที่โรงพยาบาลศรีนครินทร์ ประเทศไทย

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สาขาวิชางynecologyและรักษาทารกในครรภ์ ภาควิชาสูติศาสตร์และนรีเวชกรรม
คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น จังหวัดขอนแก่น

Pregnant Women's Expectations and Knowledge Regarding Ultrasound Scanning at Srinagarind Hospital in Thailand

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วัตถุประสงค์: เพื่อศึกษาความคาดหวังและความรู้ของสตรีตั้งครรภ์ต่อการตรวจอัลตราซาวด์ในระหว่างตั้งครรภ์ที่โรงพยาบาลศรีนครินทร์

วิธีการศึกษา: การศึกษาไปข้างหน้าเชิงพรรณนาแบบตัดขวาง โดยอาสาสมัครเป็นสตรีตั้งครรภ์แรก และเป็นการตั้งครรภ์เดี่ยวอายุครรภ์ 20 สัปดาห์ขึ้นไป จำนวน 386 ราย ที่มาฝากครรภ์ที่ห้องตรวจครรภ์ แผนกผู้ป่วยนอกโรงพยาบาลศรีนครินทร์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

สตรีตั้งครรภ์ทุกคนเป็นผู้กรอกแบบสอบถามด้วยตนเองแบบสอบถามประกอบไปด้วย 3 ส่วน คือ ข้อมูลทั่วไป คำถามเพื่อประเมินความรู้และคำถามเพื่อประเมินความคาดหวังของสตรีตั้งครรภ์ต่อการตรวจอัลตราซาวด์ ตามลำดับ

ผลการศึกษา: สตรีตั้งครรภ์ส่วนมาก มีความรู้ที่ถูกต้องต่อการตรวจอัลตราซาวด์ มีสตรีตั้งครรภ์ส่วนหนึ่งไม่ได้ตระหนักว่า การตรวจอัลตราซาวด์มากเกินไปเป็นการเพิ่มภาระงานให้กับแพทย์ ทำให้เสียเวลาและเสียค่าใช้จ่าย ความคาดหวังของสตรีตั้งครรภ์ส่วนมากในการขอตรวจอัลตราซาวด์คือ เพื่อประเมินสุขภาพของทารกในครรภ์

สรุป: สตรีตั้งครรภ์ส่วนมากมีความรู้ที่ถูกต้องต่อการตรวจอัลตราซาวด์ ความคาดหวังของสตรีตั้งครรภ์ส่วนมากในการขอตรวจอัลตราซาวด์คือ ประเมินสุขภาพของทารกในครรภ์

คำสำคัญ: ความคาดหวัง; ความรู้; การตรวจคลื่นเสียงความถี่สูง

Objective: To evaluate pregnant women's expectations and knowledge regarding ultrasound scanning at Srinagarind Hospital.

Methods: This is a prospective, descriptive, cross-sectional study. Three hundred and eighty-six singleton primigravida women, gestational age > 20 weeks who attend Antenatal Care Clinic, Outpatient department, Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. All participants completed a self-administered questionnaire consisting of three parts, socio-demographic characteristics, questions aimed at assessing the participant's ultrasound scanning knowledge and questions constructed to assess the participant's expectations regarding ultrasound scanning, respectively.

Results: Most of participants demonstrated adequate knowledge regarding ultrasound scanning. Most did not realize that too many ultrasound scanning increased doctors' workloads and wasted time and money. About the expectations with regard to ultrasound scanning, the most common reason for patients wanting to undergo ultrasound scanning in our study was to ensure the fetal health.

Conclusion: The pregnant women demonstrated high levels of knowledge regarding ultrasound scanning. The most common reason for wanting an ultrasound

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scanning was to ensure fetal health.

Keyword: Expectations; Knowledge; Ultrasound

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Introduction

Ultrasound has become an important diagnostic technique in obstetric practice to evaluate various aspects of pregnancy, depending on gestational age. However, most pregnant women do not view ultrasound as a screening tool for abnormalities. Instead, they see it as a tool that allows them to see detailed images of their fetuses, aiding in maternal-fetal bonding. Because ultrasound is a simple test that is safe, relatively inexpensive, many pregnant women request it, even when it is not indicated by the doctor.

From a medical perspective, no more than one or two ultrasound scans are recommended in low-risk pregnancies,¹ as the long-term side effects are not well-known. Too many scans can also increase doctors' workloads and waste time. However, the views of pregnant women regarding ultrasound often conflict with those from the medical perspective. Therefore, this study was conducted to evaluate pregnant women's expectations and knowledge regarding ultrasound at Srinagarind Hospital in Thailand.

Materials and Methods

This prospective, descriptive, cross-sectional study was conducted in 386 singleton primigravida women (gestational age > 20 weeks). All subjects were healthy, had no medical or surgical complications during pregnancy and were attending the antenatal care clinic at Srinagarind Hospital from December, 01, 2017 to November, 30, 2018. Subjects in whom there were fetal anomalies, abnormal fetal karyotypes or fetal growth abnormalities were excluded from the study. Ethical approval was obtained from Khon Kaen Ethical Committee, No. HE611026.

After verbally communicating the purpose of the study and obtaining informed consent, we asked all participants to complete a self-administered questionnaire written in Thai and consisting of three parts. The first contained questions about the subject's socio-demographic characteristics, the second consisted of 9 questions aimed at assessing the participant's ultrasound knowledge, and the third

contained 14 questions constructed to assess the participant's expectations regarding ultrasound. The answers in the second and third parts could be either "yes", "no" or "don't know."

Data were then analyzed using descriptive statistics (table and percentage) and Statistical Package for Social Science (SPSS) version 18.0 (SPSS Inc., Chicago, IL, USA). A $p < 0.05$ according to a Chi-squared test was considered statistically significant.

Results

A total of 386 pregnant women were included in the study. Table I shows the demographic data collected via the questionnaire. The majority of participants were over 30 years old and had natural pregnancies. Seventy-four percent (286/386) of participants had high school education or above, 96% (369/386) were married, and 78% (301/386) were employed. A total of 54% (209/386) lived in a village as opposed to a city, 67% (258/386) had family income between 10,000-30,000 baht, and 54% (209/386) paid out-of-pocket.

Table II shows participants' level of knowledge regarding ultrasound. Most participants knew that ultrasound refers to high-frequency sound waves, was safe for both mothers and fetuses, and that it should be used to screen for abnormalities at GA 18-20 weeks. The majority of the participants believed that an ultrasound scan could detect all physical abnormalities and reduce the risk of fetal death. More than half believed that an ultrasound scan could not evaluate the level of fetal intelligence or reduce fetal anomalies. Most knew that an ultrasound scan can not induce cancer and they did not realize that too many ultrasound scans increased doctors' workloads and wasted time and money.

Table III shows participants' expectations with regard to ultrasound. Most participants said their reasons for undergoing an ultrasound scan was to learn the sex of the baby. They thought ultrasound scanning should be conducted at every visit and depended on the wishes of the parents. Most believed that ultrasound scanning could improve the parents' relationship, increase maternal-fetal bonding, ensure

fetal health, reduced anxiety, give maternal joyful moment, and detect more fetal abnormalities as gestational age advanced. More than half knew the indications, risks, benefits, limitations of the procedure, and felt free to ask questions during scanning.

Discussion

It is important to understand pregnant women's expectations and knowledge with regard to ultrasound

in order to reduce possible conflict between their views and those from a medical perspective.

In this study, the majority of questions regarding ultrasound knowledge (6 out of 9) were answered correctly by most subjects, which was consistent with the results of a study by Chan et al.² Most subjects knew that ultrasound screening was safe and that they should be screened at GA 18-20 weeks. They also understood that ultrasound could not evaluate fetal intelligence, reduce fetal anomalies, or induce cancer. However, some of the subjects overestimated the capacity of ultrasound use, believing that an ultrasound scan could detect all physical abnormalities and reduce the risk of fetal death. They also believed that too many ultrasound scans did not increase doctor's workload or waste time or money.

The most common expectation of the participants in our study was ensuring fetal health, reducing anxiety, and give maternal joyful moment, which is consistent with the results of a study by Rijken et al.³ conducted on the Thai Burmese border, as well as others.⁴⁻⁸ The second and third most common expectations in our study were learning the sex of the baby (as in a study by Ohman et al.⁴) and that the father should be allowed to see the baby during ultrasound scanning. Contrary to other studies,⁶⁻⁸ the main purposes of the scan in those studies were to know the sex of the baby and to determine fetal viability.

When pregnant women ask for ultrasound scans, care providers often feel that the main reason is sex determination, which many regards as unimportant. However, we found that the most common reason for patients wanting to undergo ultrasound scanning in our study was to ensure the fetal health, something of which healthcare providers should be aware.

Most of participants demonstrated adequate knowledge regarding ultrasound scanning, likely because of their high education levels. However, there are some points about which healthcare providers should better inform their patients such as the fact that the scans cannot detect all physical abnormalities or reduce the risk of fetal death. Maternal perception of fetal movement is enough to ensure the fetal health. They should also be made aware that too many ultrasound scans are unnecessary and increase doctors' workloads and waste time and money.

This was the first to examine pregnant women's expectations and knowledge regarding ultrasound in

Table 1 Demographic data

	N (%)
Age (years)	
<20	31 (8)
20-30	85 (22)
>30	270 (70)
Pregnancy method	
Naturally	384 (99)
ART	2 (1)
Educational level	
No formal education	3 (1)
Primary and Secondary School	97 (25)
High school and above	286 (74)
Marital status	
Married	369 (96)
Separated /Divorced	17 (4)
Employment Status	
Working	301 (78)
Homemaker	85 (22)
Place of residency	
Village	209 (54)
City	177 (46)
Family income (Baht)	
<10,000	104 (27)
10,000-30,000	258 (67)
>30,000	24 (6)
Healthcare Coverage	
Social Health Insurance Scheme and Civil Servant Medical Benefit Scheme	90 (24)
Universal Health Coverage Scheme	87 (22)
Self-payment	209 (54)

Table 2 Participant’s ultrasound knowledge with 9 questions.

	“Yes” No. (%)	“No” No. (%)	“Don’t know” No. (%)
1. Ultrasound refers to high-frequency sound waves.	270 (69.9)	32 (8.3)	84 (21.8)
2. Ultrasound is safe for both mothers and fetuses.	349 (90.4)	12 (3.1)	25 (6.5)
3. An ultrasound scan can detect all physical abnormalities.	249 (64.5)	112 (29.0)	25 (6.5)
4. An ultrasound scan can evaluate the level of fetal intelligence.	66 (17.1)	254 (65.8)	66 (17.1)
5. An ultrasound scan can reduce fetal anomalies.	146 (37.8)	197 (51.0)	43 (11.2)
6. An ultrasound scan can reduce the risk of fetal death.	203 (52.6)	127 (32.9)	56 (14.5)
7. An ultrasound scan can induce cancer.	11 (2.9)	188 (48.7)	187 (48.4)
8. Too many ultrasound scans increase doctor’s workloads and waste time and waste money.	111 (28.8)	190 (49.2)	85 (22.0)
9. Ultrasound screening should be performed at GA 18-20 weeks.	280 (72.5)	47 (12.2)	59 (15.3)

Table 3 Participants’ expectations regarding ultrasound

	“Yes” No. (%)	“No” No. (%)	“Don’t know” No. (%)
1. Knowing the sex of the baby is a very important part of preparing for its arrival such as choosing clothing or bedroom decoration.	362 (93.8)	24 (6.2)	0 (0)
2. Knowing the sex of the baby is very important to family’s members especially the grandparents.	257 (66.6)	123 (31.9)	6 (1.5)
3. Ultrasound scanning should be performed at every visit.	202 (52.4)	151 (39.1)	33 (8.5)
4. The frequency of ultrasound scanning should depend on parental desire.	182 (47.2)	167 (43.2)	37 (9.6)
5. As more as gestational age advances, more fetal anomalies are able to be detected.	253 (65.5)	45 (11.7)	88 (22.8)
6. Ultrasound scanning can ensure the fetal health, reduce anxiety and give maternal joyful moment.	376 (97.4)	6 (1.6)	4 (1.0)
7. Ultrasound scanning increase maternal-fetal bonding.	311 (80.6)	61 (15.8)	14 (3.6)
8. Seeing a real-time fetal ultrasound can scanning can improve the parents’ relationship.	299 (77.5)	66 (17.1)	21 (5.4)
9. I know the indications of ultrasound in every scanning.	346 (89.6)	15 (3.9)	25 (6.5)
10. Before scanning, the doctor provides me with all of the necessary information, for example, risks, benefits, limitations, and the types of fetal anomalies that may be found.	346 (89.6)	24 (6.3)	16 (4.1)
11. The father should be allowed to see the fetus during ultrasound scanning.	347 (89.9)	21 (5.4)	18 (4.7)
12. The doctor does not explain any information while performing real-time ultrasound scanning.	119 (30.8)	242 (62.7)	25 (6.5)
13. I feel comfortable and free to ask questions during ultrasound scanning.	354 (91.7)	17 (4.4)	15 (3.9)
14. The doctor who performed the scan was friendly.	379 (98.2)	3 (0.8)	4 (1.0)

Thailand. However, it was limited in that it employed a closed-ended questionnaire and was conducted in a single center, which may limit the generalization of its results.

Conclusion

The pregnant women in this study demonstrated high levels of knowledge regarding ultrasound. The most common reason for wanting an ultrasound was to ensure fetal health, not to determine the sex of the fetus. However, there were some critical areas in which participants demonstrated inadequate knowledge. Healthcare providers should attempt to better inform their patients about these points.

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