

Research Article | Araştırma Makalesi

PREGNANT WOMEN'S BACKGROUND KNOWLEDGE, EXPECTATIONS AND ATTITUDE ABOUT SECOND TRIMESTER DETAILED ULTRASOUND

GEBELERİN İKİNCİ TRİMESTER AYRINTILI ULTRASONOGRAFİ MUAYENESİ ÖNCESİ BİLGİ DÜZEYLERİ, BEKLENTİ VE TUTUMLARI

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ABSTRACT

Objective: Our objective is to investigate the pregnant women's background knowledge, expectations, emotional status and attitudes about detailed ultrasonography performed between 18-24 weeks of gestation.

Methods: A cross-sectional survey study with a consecutive sampling method was conducted with the pregnant women between 18-24 weeks of gestation admitted to the perinatology unit at a tertiary referral center. Questionnaire was designed for the study and it was mainly composed of closed questions investigating pregnant women's sociodemographic data, obstetric history, background information about ultrasound, purpose&expectations, opinion about invasive diagnostic testing and termination of pregnancy in fetal anomalies and emotional status. Data was analyzed using descriptive statistics.

Results: Two hundred fifty seven pregnant women were enrolled to the study. Confirmation of health of the baby was the main motive for having an ultrasound scan at second trimester. One hundred twenty-five (48.6%) and 77 (30%) women believed that all congenital anomalies and all genetic diseases are detectable by second trimester ultrasound respectively. Ultrasonography was regarded as a safe imaging method for the fetus by 162 (63%) women. Multiparous women did not have a better background knowledge about ultrasound scan than nulliparous. In the case of a severe fetal anomaly, 193 (75.1%) women said they would continue pregnancy. Overall number of women that felt anxious prior to the ultrasound scan decreased and their feelings changed in a positive way following ultrasound examination ($p < 0.001$).

Conclusion: Adequate knowledge of pregnant women about what exactly second trimester ultrasound involves in addition to false positives and false negatives is of paramount importance. More efficient strategies for patient education has to be developed in order to enhance awareness about second trimester ultrasound's purpose, safety and limitations.

Keywords: Second trimester ultrasound, congenital anomaly, genetic disease, safety of ultrasound

ÖZ

Amaç: Amacımız gebe kadınların 18-24. gebelik haftaları arasında yapılan ikinci trimester ayrıntılı ultrasonografi ile ilgili temel bilgi düzeylerini, beklentilerini, tutumlarını ve duygularını araştırmaktır.

Yöntem: Ardışık örnekleme yöntemi ile 18-24. gebelik haftaları arasında tersiyer merkez perinatoloji ünitesine başvuran gebelerde kesitsel bir anket çalışması gerçekleştirildi. Anket çalışma için tasarlandı ve gebe kadınların sosyodemografik verileri, obstetrik öyküleri, ultrason ile ilgili temel bilgileri, amaç ve beklentileri, fetal anomali varlığında invazif tanı testi ve gebeliğin sonlandırılması ile ilgili görüşleri ve duygularını araştıran çoğu çoktan seçmeli sorulardan oluşuyordu. Verilerin analizi tanımlayıcı istatistik kullanılarak yapıldı.

Bulgular: Çalışmaya ikiyüz elli yedi gebe katıldı. Bebeğin sağlığının doğrulanması ikinci trimester ultrason taraması yaptırmak istemelerinin ana sebebi idi. Sırasıyla 125 (%48,6) ve 77 (%30) gebe tüm konjenital anomalilerin ve tüm genetik hastalıkların ikinci trimester ultrason tarafından tespit edilebildiğini düşünüyordu. Yüz altmış iki gebe (%63) ultrasonografiyi fetus açısından zararsız bir görüntüleme metodu olarak kabul etmekteydi. Multipar gebelerin ultrasonla ilgili temel bilgi düzeyi nulliparlardan daha iyi değildi. Yüz doksan üç kadın (%75,1) ağır fetal anomali varlığında gebeliğine devam edeceğini söyledi. Ultrason taraması öncesi endişeli olan gebe sayısı ultrasonografi muayenesi sonrası azaldı ($p < 0,001$) ve duyguları olumlu yönde değişti.

Sonuç: Gebelerin ikinci trimester ultrasonografinin tam olarak neyi kapsadığı, yanlış pozitif ve yanlış negatiflikleri ile ilgili yeterli bilgi sahibi olması oldukça önemlidir. İkinci trimester ultrasonun amacı, güvenilirliği ve kısıtlılıkları ile ilgili farkındalığı artırmak için daha etkili eğitim stratejileri geliştirilmelidir.

Anahtar Kelimeler: İkinci trimester ultrason, konjenital anomali, genetik hastalık, ultrasonun güvenilirliği

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Introduction

Second trimester detailed ultrasound scan has become an essential part of routine obstetric care in the current era. It involves assessment of fetal biometric measurements, fetal cardiac activity, number of fetuses and chorionicity in multiple pregnancies, fetal anatomy, gestational age, placental localization and amniotic fluid volume.¹

The prevalence of major congenital anomalies which is a major contributor to neonatal morbidity and mortality is approximately 2%.²⁻⁴ The detection rate of major structural anomalies in second trimester is 44-61% in various studies.⁵⁻⁷ However, pregnant women may have unrealistic expectations and demands unless they are well informed about ultrasound examination. The technical factors responsible for the sensitivity of ultrasound are image quality of the device and experience of the sonographer, patient factors are, body mass index, fetal position and gestational age.⁸ Nonvisualisation of anomalies during scanning may lead to erroneous assumption of guarantee of a healthy baby without a birth defect. Previous studies emphasize that the background knowledge of the parents is insufficient frequently.⁹⁻¹¹ In this context, explanation of diagnostic capabilities and limitations of ultrasound comprehensively to the family before the examination is an important point.

On the other hand, despite visualisation of unborn baby leads to positive emotions and increase attachment, prospective parents may encounter unexpected findings and consequently have to give tough decisions such as invasive genetic testing or termination of pregnancy. Studies have shown some women may feel stressed and anxious prior to the ultrasound scan owing to the possibility of detecting or missing malformations and safety concerns.^{10, 11} But after a normal scan result anxiety decreases.¹²

Our goal is to investigate the pregnant women's background knowledge, expectations, emotional status and attitudes about detailed ultrasonography performed between 18-24 weeks of gestation in our clinic.

Methods

A cross-sectional survey study with a consecutive sampling method was conducted in Kocaeli University Hospital Perinatology Unit between December 2022 and February 2023. On arrival for their scheduled second trimester ultrasound scan between 18- 24 weeks of gestation, all eligible women were given written information on the study and a consent form prior to examination. Women willing to participate completed a self-administered questionnaire in the unit immediately before and after the scan. The questionnaire was designed specifically for the study, based on the statements of pregnant women in previous ultrasonographic examinations. It was pretested on ten pregnant women to verify the questions were clear and

apprehensible. It consisted of 23 questions and most of them were closed questions (Appendix). Covered topics were sociodemographic data, obstetric history, opinion about invasive testing and termination of pregnancy, background information about ultrasound, purpose&expectations and emotional status. All of the questions were asked before, but after ultrasound scan just the question about their feeling was asked again. It was completed anonymously without presence of a researcher before the verbal and written counseling about second trimester ultrasonography in the unit. However, if they fail to understand, participants could raise any questions to the staff. Authorization for the study was granted by the Kocaeli University Ethics Committee.

Pregnant women followed up in our unit for a known fetal anomaly or maternal complication, who were out of 18–24 weeks of gestation, who did not understand Turkish, and who did not accept to participate were excluded.

Sociodemographic data and obstetric data included; age, educational attainment, employment, gravidity, parity, spontaneous abortion, dilatation& curettage, live birth history, previous stillbirth, mode of delivery, gestational age, smoking habit, presence of consanguineous marriage, previous baby with congenital anomaly, second trimester ultrasound in previous pregnancy. The screening tests for Down syndrome in the current pregnancy was noted. The purpose and expectations of women about the ultrasound scan was evaluated with one question; 'Why do you want to have a second trimester ultrasonographic scan?', more than one choice could be selected from several statements. In two hypothetical questions, their opinion about invasive testing and termination of pregnancy if severe fetal anomaly was detected in ultrasound were asked, there were three alternative answers; "Yes", "No" and "Unsure". Nulliparous and multiparous women were compared for each topic.

Participants were also asked about how they had received information on the second trimester ultrasound, duration of examination, at what gestational ages and by whom it is performed, whether it has the ability to detect all congenital anomalies and all genetic diseases of the baby, whether it is hazardous to the baby and if they knew which organs were scanned.

Emotional status of the women were questioned immediately before and after the examination, alternative responses were; "Excited" "Anxious" "Happy" and "Comfortable".

Power analysis showed a sample size of 208 participants to achieve an effect size (w) of 0,25 using a 1 degree of freedom Chi-square test with a significance level of 0.05. Considering the possibility of data loss of 20%, it was planned to recruit minimum 250 women.

Statistical Analysis

Data were analysed using IBM SPSS 20.0 (IBM Corp., Armonk, NY, USA) program. Normality is evaluated using Kolmogorov Smirnov test. Continuous variables with

normal distribution were presented as mean±standard deviation, for nonnormally distributed data median (Interquartile range-IQR) was presented. *Categorical* variables were represented by *frequency* and percentage. Differences between groups with normal distribution were calculated by independent t test. Chi square test was used for categorical variable group comparison, Mc Nemar test was used for before after emotional comparison. Statistical significance was set at $p < 0.05$.

Results

The study consisted of 257 women that accepted to participate at the time of second trimester ultrasound in Kocaeli University Hospital Perinatology Unit. Mean maternal age was 29.8 ± 5.4 years. Consanguinity was found in 18 couples.

Table 1 displays the sociodemographic and obstetric data of the patients. The number of multiparous patients were 132 (51.4%). Six women had a history of stillbirth, nineteen patients had a history of congenital anomaly in the prior pregnancy. Second trimester ultrasound was performed in 92 patients in the previous pregnancy, resulting in an overall rate of 35.8%. Nulliparous women were younger ($p < 0.001$), had been employed more ($p = 0.004$) and had bachelor’s degree more ($p < 0.001$) than multiparous women.

Table 1. Demographic and obstetric data of the participants

	Median (IQR)/n (%)
Gestational age (median, weeks)	21 (20- 22)
Nulliparous	125 (48.6%)
Multiparous	132 (51.4%)
Fetal anomaly in previous pregnancy	
Yes	19 (7.4%)
No*	238 (92.6%)
Consanguineous marriage	
Yes	18 (7%)
No	239 (93%)
Screening tests for Down syndrome	168 (65.4%)
First trimester combined test	135 (52.5%)
Triple test	6 (2.4%)
Quadruple test	18 (7%)
Cell free fetal DNA	9 (3.5%)
Smoker	
Yes	26 (10.1%)
No	231 (89.9%)
Education	
≤High school	122 (47.5%)
≥University	135 (52.5%)
Working status	
Employee	89 (34.6%)
Unemployed	169 (65.4%)

IQR:Interquartile range, *Includes nulliparous women

Eightynine women (34.6%) did not have screening tests for Down syndrome in the current pregnancy, 135 (52.5%) had first trimester screen, 18 (7%) had quadruple, six (2.4%) had triple test, nine (3.5%) had cell free fetal DNA test. The results of the screening tests showed high risk for Down syndrome in 19 patients. Nulliparous women preferred to have screening tests

more ($p < 0.001$), but multiparous women had increased risk for Down syndrome more ($p = 0.0034$).

For pregnant women, confirmation of health of the baby was the main motive for having an ultrasound scan at second trimester. The reasons why pregnant women consider fetal ultrasound are displayed in detail in Figure 1. Except for evaluation of increased risk for Down syndrome, the purposes of the nulliparous and multiparous women considering second trimester ultrasound scan were not different statistically.

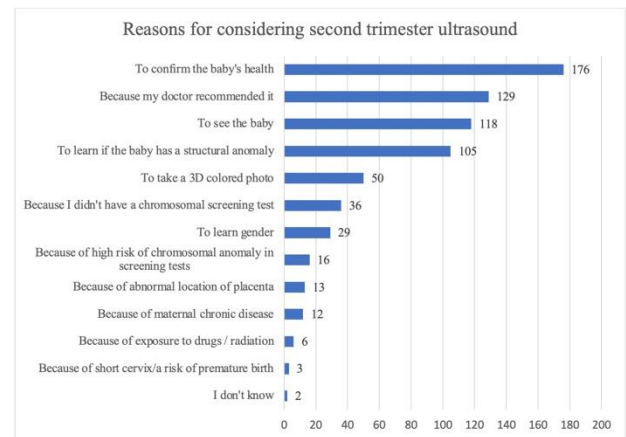


Figure 1. Reasons of pregnant women for considering second trimester ultrasound. (x axis shows absolute number of women)

The most common source of information on second trimester ultrasound was their obstetrician (79.8%), previous experience (14%), social media (2.3%), friends, relatives and neighbours (3.9%). Eighty five percent said second trimester ultrasound is performed between 18-24 gestational weeks, 75% thought it would take approximately 30 minutes, 71% said it is performed by maternal fetal medicine specialists. Thirty eight women (14.7%) stated that they did not know specifically which organs and systems are scanned.

One hundred twenty-five (48.6%) patients thought that all congenital anomalies can be detected by second trimester ultrasound, 34 (13.2%) had the opposite idea and the remaining 98 did not have any idea (Table 2). Thirty percent of the patients (n=77) believed that the ultrasound can detect all genetic diseases, 18.3% thought vice versa, 51.7% did not know. Of the 257 participants, 162 (63%) thought ultrasound does not cause any harm to the baby, 11 (4.3%) said its harmful. At least one of the latter three questions about background knowledge were correctly answered by 224 (87.1%) women. About limitations and safety of ultrasound, all answers were true in 14 (5.4%), on the contrary, none of the responses were accurate in 33 (12.8%). Background knowledge of nulliparous and multiparous women was not different except more multiparous women stated that they knew which organs are scanned by ultrasound ($p = 0.041$).

Table 3 shows opinion of pregnant women about invasive genetic testing and termination of pregnancy if fetal anomaly is detected.

Table 2. Background knowledge about ultrasound’s limitations and safety

	Yes	No	Unsure
Do you think second trimester detailed ultrasonography can detect all structural anomalies?	125 (48.6%)	34 (13.2%)	98 (38.1%)
Do you think second trimester detailed ultrasonography can detect all genetic diseases?	77 (30.0%)	47 (18.3%)	133 (51.7%)
Do you think ultrasonography can cause any harm to the baby?	11 (4.3%)	162 (63.0%)	84 (32.7%)

Sixty-seven patients (26.1%) stated that they would opt for an invasive genetic testing if major anomaly is detected, 72 (28%) would decline, 118 (45.9%) were unsure. In case of a severe anomaly, eleven (4.3%) women would select termination of pregnancy, 193 (75.1%) would continue and 53 (20.6%) were unsure. Sixty-nine patients (26.8%) would accept neither invasive testing nor termination in the probable fetal anomaly. Multiparous women tend to decline invasive genetic testing more (p=0.009) but their opinion about interruption of pregnancy was not statistically different from nulliparous women (p=0.231).

Table 3. Opinion about invasive genetic testing and termination of pregnancy if fetal anomaly is detected.

	Yes	No	Unsure
If a fetal anomaly is found in the ultrasound examination, would you consider having a genetic examination?	67 (26.1%)	72 (28%)	118 (45.9%)
If a severe fetal anomaly is found in the ultrasound examination, would you consider termination of pregnancy?	11 (4.3%)	193 (75.1%)	53 (20.6%)

Answers about patients’ emotional status are shown in Figure 2. After ultrasound the number of women that had chosen the option ‘excited’ decreased (p< 0.001), consequently participants expressing themselves as ‘happy’ increased (p< 0.001). Sixty patients (23%) felt anxious prior to the examination. When these patients were evaluated further; 15 were referred for fetal anomaly or placental abnormalities, nine had high risk for Down syndrome in screening tests, eight had a history of congenital anomaly in a previous child, 20 patients did not have a screening test. Following the sonographic evaluation of the baby, a significant change in emotions was observed among 78% of women who experienced anxiety (p< 0.001). Emotional status of nulliparous and

multiparous women were similar before and after ultrasound (p=0.139 and p=0.723).

Discussion

In the present study, majority of women attending second trimester ultrasound had a purpose of confirmation of health of the baby. We found that 33 (12.8%) of the pregnant women had a poor background knowledge about ultrasound. Multiparous women does not seem to have better knowledge. In addition to that, pregnant women may feel anxious prior to ultrasound examination particularly in high risk situations, however, their feelings change in a positive way following ultrasound examination provided that major anomaly or obstetric complication is not detected.

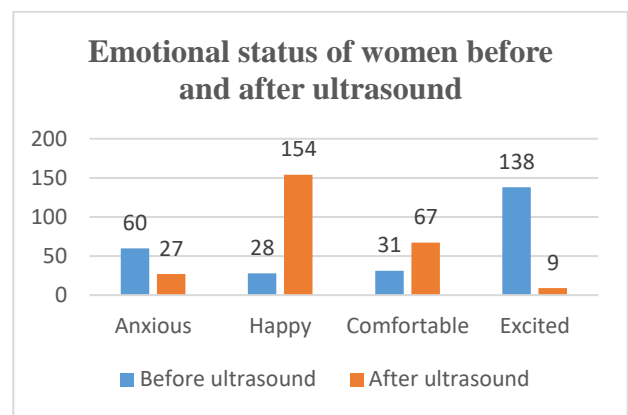


Figure 2. Figure 2 Emotional status of pregnant women before and after second trimester ultrasound. (y axis shows absolute number of women)

Ultrasonography has become an important modality in the assessment of fetal wellbeing. Technological innovations as well as accumulation of scientific knowledge and experience in years has led improved detection of fetal anomalies, however it does not approach to a hundred percent even in the best hands. One of the major concerns about negative ultrasound screening in second trimester is that it might cause false reassurance in parents. Those without anomaly in sonographic scan wrongly interpret their result as indicating the baby is devoid of a genetic disease or anomaly at birth. Hence, birth of an unhealthy baby might lead to disappointment in families. Main reason underlying beneath these irrational beliefs is the lack of information about ultrasound. In a study, only 57% of the women said they had received information before the scan¹³, on the contrary Larsen et al.¹⁴ reported a ratio of 90%.

In our study, at least one of the questions about knowledge were correctly answered by 87% indicating participants had some degree of background information regarding second trimester ultrasound. Nevertheless, only 14 (5.4%) women responded correctly to all questions about basic information suggesting overall inadequate knowledge about ultrasound in our cohort. It is a striking implication considering one third of the

participants had experienced ultrasound examination in the previous pregnancy. In our study, background knowledge of multiparous women did not differ much from nulliparous women. Lalor et al pointed out the same finding in their investigation.¹¹ Therefore, it is clear that a more efficient way of patient education has to be developed and more comprehensive counseling is required. Wong et al postulated that half of the women had a misconception about ultrasound's detection rate and safety and it is associated with education and income.¹⁵ In a study from UK, the aim of scan and detectable anomalies were well known by the pregnant women attending second trimester ultrasound but the limitations were not.¹⁶ Smith et al.¹⁷ found that 22% of women were unaware of the false negatives of the sonographic scan but this rate was higher in our study (48.6%). The former study showed that it is possible to provide a better insight about ultrasound after education of medical staff and midwives in addition to written information sheet given to women.¹⁷ A study from China revealed 65.9%, 50% and 43.1% of the women understood that ultrasonography cannot diagnose all anomalies, genetic diseases and Down syndrome respectively.⁹ Only 18.3% of the participants attending to our clinic were sure about the fact that genetic diseases are not detectable by ultrasound, on the other hand, a rate of one in four was found in a previous research conducted in our country.¹⁸

Sixty three percent of women believed ultrasound was not harmful to the fetus in our study, this percentage correlates fairly well with Kohut et al's finding of 68%.¹⁹ However, higher rates are reported in various investigations.^{13, 15} These numbers are not surprising because in contemporary practice ultrasound is so widely used for fetal imaging, most of the women presume it is safe.

The foremost expectation of our patients is in line with the previous papers; confirmation of health of the baby.^{11,13,14,19-21} Actually, families' goal is quite straightforward, they would like to hear about general fetal wellbeing that also helps attaining reassurance. Interestingly, most of the women choosed the statements that express the purpose in a positive way, such as "confirmation of health" rather than "detection of anomalies". This indicates optimistic expectations about the prenatal ultrasound. Various nonmedical aspects also exist to a lesser extent, women desire to see the baby and get a 3D picture or learn gender. Expectations and purposes of both multiparous and nulliparous women were similar in our study. But Gudex et al. mentioned that nulliparous women more likely desire to have ultrasound to view the baby while multiparous wish reassurance.²² Expecting nothing wrong found with the baby was correlated with being parous, older and higher level of education in another study.²¹

One of the most important findings in our study is that 75.1% of the women would continue pregnancy after diagnosis of a severe anomaly. On the contrary, in the survey study of Turkish pregnant women mentioned

previously, 55% said they would choose termination.¹⁸ The educational attainment of the participants were similar in both studies so local factors and cultural beliefs might have caused this difference. However this result should be interpreted cautiously since it is a theoretical question, families may approach from a different standpoint if the probability of an anomalous fetus comes true. In our sample, parity did not seem to cause difference in mothers' decision of abortion in fetal anomalies. The frequency of intention for termination of pregnancy amongst pregnant women in the case of an anomaly was reported as 75% by Athasaniadis et al.²³ If fetal malformation is detected, multiparous women would prefer to terminate pregnancy more common than nulliparous participants in their study. They underlined that gestational age, maternal age and severity of fetal anomalies are significant factors influencing decision of interruption of pregnancy. Soukas et al. mentioned that 86% of women would opt for termination of pregnancy in lethal anomalies and factors effecting this decision were religious beliefs and frequency of practicing religious duties.²⁴ Unconditional acceptance of child is based primarily on religious and sociocultural grounds which might explain the discrepancy between the studies. We also evaluated women's opinion about genetic testing, 28% stated that they would decline invasive procedures. This might also be linked to unconditional acceptance of the baby in addition to the risk of invasive procedures.

Most predominant emotion before ultrasound was excitement and after ultrasound was happiness in our patients. Approximately one in four women were anxious before sonographic examination. Fear of detecting as well as missing anomalies may cause psychological strain on women.¹² Eurenus et al mentioned that women with a history of complicated pregnancy had more anxiety before ultrasound scan.¹³ Our study implies that most of the anxious women prior to the examination has a high risk pregnancy for either fetal anomaly or genetic disease. Aside from that, ensuring fetal health in high risk situations may ease negative feelings. A study from Sweden with a large sample size pointed out that after a normal sonographic scan result women show reduction in worried state.²⁵ The authors of the latter study developed a scoring system for worried state of mind. Despite we did not use a scale, we found overall number of women feeling anxious decreased after a normal scan. In other words, a negative ultrasound result for anomalies provides relief from emotional tension. Experience in ultrasound was very positive in 49% of women with a previous child while 66% of women in first pregnancy in a previous study.²¹ However, we did not find any difference of emotional status between nulliparous and multiparous women.

Both high risk and low risk pregnancies are recruited during this study to bring a broader perspective. This might reflect the initial emotional response of high risk patients and how it changes after ultrasound scan. Only the women at gestational ages between 18 and 24 weeks are investigated, information about ultrasound may be

insufficient and detection rate of anomalies are lower in first trimester that might have influenced the answers of the participants if they had been recruited. Apart from questions designed to elicit how enrolled women perceived ultrasound, their views on genetic diagnosis and termination of pregnancy were also explored distinct from several studies.

Whether the selected population for the survey is representative of the whole country is obscure because it involves women examined at a tertiary referral clinic that were scheduled for second trimester ultrasound. Questionnaire was composed of closed questions mainly, hence respondents had to choose between confined answers, which can compromise the actual results regarding viewpoints and attitudes of the entire group. Also, the level of anxiety was not measured using psychiatric inventories and responses about emotional status are subjective. Similarly, the level of information about ultrasound was not quantified since a standardized way of measuring it is not described in the literature.

Adequate knowledge about what exactly second trimester ultrasound involves in addition to false positives and false negatives is of paramount importance since increasing number of women demand for this scan. More efficient strategies for patient education has to be developed in order to enhance awareness about second trimester ultrasound's purpose, safety and limitations.

Compliance with Ethical Standards

Kocaeli University Ethics Committee approved this study (GOKAEK-2022/21.18). Informed consent was obtained from all participants.

Conflict of Interest

The author declares no conflicts of interest.

Author Contribution

All the authors equally contributed to this work.

Financial Disclosure

None

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Questionnaire

1. Your age?

2. Your education status?

1. I am illiterate 2. Primary school 3. Secondary school 4. High school 5. University 6. Postgraduate

3. Do you work?

1. Yes 2. No

4. Previous pregnancies? What is your gestational age?

G: P: A: D/C: Alive: Stillbirth: NVB/CS:

Pregnancy Period: weeks / days

5. Do you smoke?:

1. Yes 2. No

6. Do you have a consanguineous marriage?

1. Yes 2. No

7. Did you have a screening test in this pregnancy?

1. Yes (double-triple- quadruple- nipt) 2. No

8. Does the screening test result show high risk for chromosomal anomalies?

1. Yes 2. No

9. Did you have a history of fetal anomaly in your previous pregnancy?

1. Yes 2. No 3. It's my first pregnancy

10. Did you have a detailed second trimester sonographic scan in your previous pregnancy?

1. Yes 2. No 3. It's my first pregnancy

11. If a fetal anomaly is found in the ultrasound examination, would you consider having a genetic examination?

1. Yes 2. No 3. Unsure

12. If a severe fetal anomaly is found in the ultrasound examination, would you consider termination of pregnancy?

1. Yes 2. No 3. Unsure

13. Why do you want to have a second trimester detailed ultrasound scan?

1. To see the baby
2. To take a 3D colored photo
3. To learn gender
4. Because I was taking drugs / exposed to radiation
5. Because of a previous history of fetal anomaly
6. Because I have a chronic disease
7. Because the chromosomal anomaly risk is high in the screening test
8. Because I didn't have a chromosomal screening test
9. To confirm the baby's health (fetal growth, amniotic fluid volume)
10. To learn if the baby has a structural anomaly (disability)
11. Because my doctor recommended it
12. Because I have a short cervix/a risk of premature birth
13. Due to the abnormal location of placenta on to the cervix
14. I don't know

14. From whom did you hear about second trimester detailed ultrasound scan?

1. My doctor 2. Social media 3. Neighbour/relative/friend 4. From my previous pregnancy

15. How do you feel before the examination?

1. I am happy
2. I am excited
3. I am anxious
4. I am comfortable

16. Do you think second trimester detailed ultrasonography can detect all structural anomalies?

1. Yes 2. No 3. I have no idea

17. Do you think second trimester detailed ultrasonography can detect all genetic diseases?

1. Yes 2. No 3. I have no idea

18. Do you think ultrasonography can cause any harm to the baby?

1. Yes 2. No 3. I have no idea

19. Do you know when the second trimester detailed ultrasonography is performed?

1. Certain weeks (18-24 weeks)

2. Always

3. I don't know

20. Do you know which organs and what is examined in the second trimester detailed ultrasonography?

1. Yes 2. No 3. Partially

21. Do you know who performs detailed ultrasonography?

1. Gynecology and obstetrics specialist

2. Radiology specialist

3. Maternal fetal medicine specialist

22. How long does a routine second trimester detailed ultrasonography examination take approximately?

1. 0-10 min 2. 20-30 min 3. 1-1.5 hours

23. How do you feel after the detailed ultrasonography examination?

1. I am happy

2. I am excited

3. I am anxious

4. I am comfortable