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## Original Research

### ANXIETY LEVELS IN PREGNANT WOMEN UNDERGOING OBSTETRIC ULTRASONOGRAPHY

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#### ABSTRACT

**Introduction:** Ultrasonographic imaging of fetus has revolutionized the obstetric care in 20<sup>th</sup> century. Immense information provided by the sonogram to the care provider has become the cornerstone of modern obstetrics practice. Sonography should be performed for a valid medical reason by a trained person. Findings of a sonogram can be very useful to clinician and a source of joy to expectant women and family members. However, any fetal anomaly detection can lead to distress and anxiety. It is natural for a woman to feel anxious while waiting for fetal sonogram. The degree of anxiety may vary from one person to another. Anxiety is defined as an abnormal and overwhelming sense of apprehension and fear often marked by physical signs (such as tension, sweating, and increased pulse rate), by doubt concerning the reality and nature of the threat, and by self-doubt about one's capacity to cope with it. According to "American Psychological Association" Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns. People take various steps to reduce anxiety like discussing doubts with someone or asking for advice. However, severe anxiety may force one to completely avoid the situations that cause anxiety. **Material and method:** A cross-sectional observational study analysis was conducted in Mithila Hospital Pvt. Ltd., Janakpur, Nepal from January, 2018 to January, 2019 by the collaboration of the Departments of Radiology and department of Obstetrics and gynecology. Permission was granted by the hospital board to conduct the study. Data of 200 women who remained enrolled in the study till the end was analyzed. Written consent was obtained from all the participants. A pre designed questionnaire was used to collect the data. **Results:** A gradual decline in the anxiety level was noted from as women advanced from first to third trimester. Out of 200 participants, 122 patients did not show any sort of anxiety while waiting for the ultrasound in first trimester. This number increased to 161 and 183 in second and third trimester respectively. 5.5% women cancelled or postponed their sonogram appointment due to severe anxiety in first trimester in comparison to 1.5% in third trimester. **Conclusion:** Fetal health anxiety is natural in pregnancy and cannot be completely prevented. The decline noted in the level of anxiety from first to third trimester in this study provides the evidence that with good explanation most of the women were not anxious at the end of study while waiting for sonogram.

**Keywords:** Anxiety, Pregnancy, Ultrasonography

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#### INTRODUCTION

Anxiety is a normal emotional state. It is normal for any individual to get anxious while facing unknown or new situations in life. According to "American Psychological Association" Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. Anxiety is often manifested as fear,

nervousness, sense of impending danger, feeling weak, palpitation, inability to concentrate, gastrointestinal problems and sleep disturbances. The person suffering with anxiety exhibits restlessness, sweating, trembling, increased pulse rate, increased respiratory rate and blood pressure. Pregnancy is an important change in any woman's life. It exposes a woman to rapid and immense physical, physiological and psychological

changes. Pregnancy is a stressful situation that may sometimes exacerbate previous mental illness. In extreme cases there could be thoughts of death or suicide, or even attempts of suicide. The level of perceived stress was found significantly higher in those women who had a higher risk of fetal malformation. (1,2,3,4) Vital information about anatomy, physiology, anomalies, growth and well-being of fetus can be obtained by performing a sonographic examination performed according to the recommended standards of the American Institute of Ultrasound in Medicine (2013a). National Institute of Child Health and Human Development (NICHD) workshop concluded that “every fetus deserves to have a physical examination”. (5) An ultrasound examination is a convenient, painless investigation that provides valuable information. Ultrasound is a sophisticated medical imaging technique that uses high-frequency acoustic energy over the human hearing range, transmitted into the human body using a set of transducers attached to the skin. Routine fetal ultrasound is primarily performed to determine viability, estimate gestational age, placental localization and screen for multiple pregnancies. Over the years ultrasound has become a sensitive fetal screening test for fetal abnormalities detection. (6) Ultrasound examination creates some levels of anxiety to pregnant women. It can be due to the anticipated fear of outcome and side effects, pain, discomfort, previous unpleasant experience etc. However, it is unusual to experience severe anxiety while waiting for the ultrasound examinations. (7) The present study was conducted to determine the anxiety levels amongst pregnant subjects regarding fetal sonogram.

**MATERIAL AND METHOD**

A cross-sectional Observational study was conducted in the Departments of Radiology in association with department Obstetrics and gynecology in Mithila Hospital, Janakpur. Permission was granted by the hospital board to conduct the study. Data obtained from 200 women who remained enrolled in the study till the end was used for analysis. Written consent was obtained from all the participants. A questionnaire was asked to be filled by each patient undergoing ultrasound. All mentally fit females, within age group of 16-45 were included in the analysis. The questionnaire included 3 sections; section A included general information such as name, age, time of pregnancy, any relevant medical condition. Section B included participant’s psychological condition while waiting for the ultrasound and section C included cause of anxiety while waiting for ultrasound. Anxiety level was measured using Beck anxiety inventory. All responses were manually recorded and later interpreted electronically. Data was analyzed statistically using SPSS software.

**RESULTS**

Table 1, Graph 1 shows the distribution of subjects according to the age group. It shows that out of total 200 participants, 56 participants were ≤ 19 years of age. Majority of the women were of ≥ 20-24 years of age (N=80, 40%). 9 women were of ≥ 35 years of age. Table 2, Graph 2 shows the level of anxiety among the subjects. During first trimester, out of 200 participants, 122 women (61%) did not show any sort of anxiety while waiting for the ultrasound. Mild anxiety was present in 22% (n=44) and moderate anxiety in 11.5% (n=23) of the participants in first trimester group. In second and third trimester 80.5% (n=161) and 91.5% (n=183) women respectively expressed no anxiety regarding the ultrasonography. Level of mild anxiety was 10%

(n=20) in second trimester and 4.5% (n=9) in third trimester. Severe anxiety was noted among 11( 5.5%) women in first trimester, 7 (3.5%) women in second trimester and 3 (1.5%) women in third trimester forcing them to cancel or postpone the investigation. Table 3 shows the various reasons responsible for the anxiety of the participants. Out of 78 subjects in first trimester, 21 were not sure what the examination is about, 12 were worried about the outcome of the examination, 14 feared pain or discomfort during the examination, 8 were worried about side-effects of USG on fetus, 2 were worried about equipment used in examination, 11 were afraid because of past unfavorable outcome during USG (H/O fetal anomaly) and 10 had more than one of the above reasons. In subsequent USG during second and third trimester the number of anxious women reduced. Table 4 shows the response of subjects regarding remedies to reduce anxiety. This was asked during first trimester Ultrasonography. 122 subjects were not anxious. 25 subjects stated that the anxiety could be reduced if a trained personnel is available to answer to their queries, 28 answered that their anxiety would reduce if the waiting time of ultrasonography was reduced, 15 said that their anxiety could reduce if audio-visual aids displaying about the procedure was shown to them beforehand and 10 subjects stated that their anxiety may reduce if Radiologist, Obstetrician, nurse or medical personnel would have explained the procedure in detail to them.

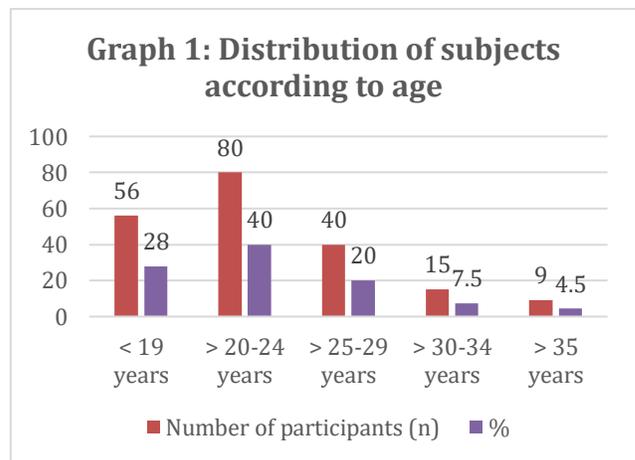


Table 1: Distribution of subjects according to age

Age distribution		
Years	Number	%
≤ 19	56	28
≥ 20-24	80	40
≥ 25-29	40	20
≥ 30-34	15	7.5
≥ 35	9	4.5

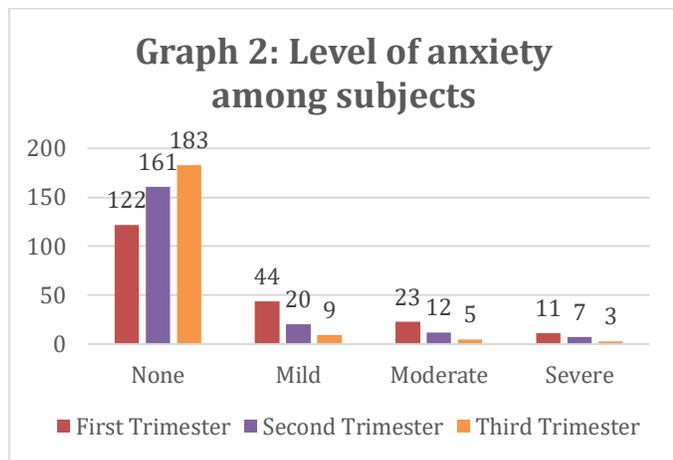


Table 2: Level of anxiety among subjects

Trimester	None	Mild	Moderate	Severe
First	122(61%)	44(22%)	23(11.5%)	11(5.5%)
Second	161(80.5%)	20(10%)	12(6%)	7(3.5%)
Third	183(91.5%)	9(4.5%)	5(2.5%)	3(1.5%)

Table 3: Reasons for anxiety in the subjects before the sonogram

Reason for Anxiety	First Trimester (n=78)	Second Trimester (n=39)	Third Trimester (n=17)
Not sure what the examination is about?	21	5	1
Worried about outcome of the examination	12	10	6
Fear of pain or discomfort during examination	14	1	0
Worried about the side effects of USG on fetus	8	6	3
Worried about the equipment used in USG	2	0	0
Afraid due to past unfavorable outcome during USG/h/o fetal anomaly	11	9	6
More than one reason	10	8	1

(Only anxious women were considered out of 200 i.e. why change in “n”)

### DISCUSSION

A woman’s body undergoes profound change during pregnancy. These changes occur at the level of anatomical, physiological and biochemical functions. In normal pregnancy virtually every system undergoes functional and anatomical changes. Pregnant

women experience a variety of physical and emotional changes which may trigger anxiety. In the study it was observed that a significant number of pregnant women were not anxious during waiting at all. Out of 200 participants 122 were not at all worried or anxious about the investigation; 31% of these women were not worried because of prior experience of sonogram whereas rest of the women (n=60,30%) were not worried because they themselves wanted to have a fetal scan. Antenatal examination

Table 4: Remedies to reduce anxiety

Response	Remedy to reduce anxiety
	(this question was asked only on first visit)
I am not worried.	122
Radiologist / OBGYN/ Nurses / medical personnel should explain the procedure in detail	10
Audiovisual aids about the procedure will reduce the anxiety	15
If waiting time for USG is reduced	28
If a trained person is available to answer my queries	25

has an important effect on a woman’s well-being. Many studies have shown that women’s worry increases immediately before the ultrasound examination and decreases shortly thereafter if the results are positive. (8,9,10) In our study too number of women suffering with severe anxiety reduced from 11(5.55) to 3(1.5%) by the end of the study. According to Durand et al, Green J M and Sahin and Gungor factors such as information, test results, and the women’s own experiences of the risk of something being wrong affects the level of anxiety. (11,12,13) Our study confirmed these findings as women were found to be anxious due to various reasons and number of reasons dropped as these women had next ultrasonograms. (Table 3). No anxiety was reported by 183 (91.5%) women by the end of the study in comparison to 122(61%) at the beginning of the study. Waiting time for the scan had an important impact on the level of anxiety as 14% of the women reported that reduction in waiting time would help in decreasing the anxiety. Similarly, 12.5% women expressed desire to talk with a trained person to know about the procedure, so as to reduce worries. Approximately 7.5% women thought that audiovisual aids should be available to decrease anxiety and explain the investigation procedure. Only 5% women felt that they were not explained properly regarding the ultrasonogram by the healthcare provider, which is in contrast to the finding of another study where majority of the women (50%)

had no proper explanation about the procedure from the health care provider. <sup>(14)</sup> Anxiety of a woman undergoing fetal ultrasound can be alleviated by various means. Language and cultural differences is an important factor affecting communication between health care professionals and patients. <sup>(15)</sup> Clear and complete information in client's own language goes a long way in mitigating the doubts. Many studies have stressed on the effect of environment on the medical outcome of a treatment. <sup>(16,17)</sup> In a study conducted by Ulrich RS <sup>(18)</sup> a strong correlation was found between positive healing environment and better outcome for patients.

## CONCLUSION

Anxiety and worry is a normal phenomenon during pregnancy. Fear of unknown causes anxiety. It is the duty of the healthcare provider to alleviate the fear and anxiety of a pregnant woman. If any procedure like fetal ultrasonography is found to add to already existing anxiety, then it should be addressed by various means. In our study majority of the women were not suffering with high level of anxiety. Moreover, the level of anxiety decreased with increased interaction with the radiologist and healthcare provider.

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