

# Evaluation of Satisfaction Level of Pregnant Women Presented for Obstetrics Ultrasound Scan in Gombe State Specialist Hospital in North Eastern Nigeria

\*Sajida B. Lawan<sup>1</sup>, Dlama J. Zira<sup>2</sup> and Bappah S. Yahaya<sup>3</sup>

<sup>1</sup>Department of Medical Radiography,  
Bayero University Kano,  
Nigeria.

<sup>2</sup>Department of Radiography and Radiation Sciences,  
Federal University Lafia,  
Nigeria.

<sup>3</sup>Department of Medical Radiography,  
Federal University of Health Sciences Azare,  
Nigeria.

Email: lawansajida65@gmail.com

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## Abstract

*Obstetrics ultrasound plays an important role in patients care through foetal and maternal management serving as an indispensable tool in routine antenatal care due to its sensitivity in detecting foetal anomaly, failed pregnancy, pregnancy dating as well as multiple gestation. The study aimed at evaluating the level of satisfaction in pregnant women presenting for obstetrics scan at Gombe State Specialist Hospital where a convenient sampling technique was used to draw one hundred and sixty (160) pregnant women coming for obstetric scan at Gombe State Specialist Hospital from February, 2020 to June 2020. Data was collected using a well-structured questionnaire designed based on the parasuraman service quality model and analyzed using statistical package for social sciences (SPSS) version 20.0 where descriptive statistics were generated and presented in Tables and Charts. The participants were aged between 16 and 40 years with a mean age of 24.64. The results showed total patient's satisfaction with regards to waiting area and waiting time, however highest level of unsatisfaction is recorded in the patient's perception of the accuracy of the ultrasound scan. The study also found majority of the respondents believed that the main purpose of obstetric scan is to check for fetal wellbeing while 19.4% of the respondents had obstetric scan for gender determination. Obstetrics scan is considered to be a major examination among pregnant women for confirmation of fetal wellbeing and gender. The level of education and exposure by pregnant women serve as a key factor in expecting more from obstetric scan.*

**Keywords:** Evaluation, Obstetrics, Satisfaction, Ultrasonography, Scanning

## Introduction

Obstetrics ultrasound plays an important role in patients care through foetal and maternal management (Alfred, 2014). Sonography is an indispensable tool in routine antenatal care not just for its readily availability but also its sensitivity in detecting fetal anomaly, failed pregnancy, pregnancy dating as well as multiple gestation.

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\*Author for Correspondence

Mother's womb is the first residence of every individual for the first nine months (266 days or 38 weeks to be exact) of existence. During this period, development begins from one celled structure to an organism with billions of cells (Singh, *et al.*, 2007). Numerous tissues and organs are formed during the first two (2) months come to function in unison; the developing individual is called an embryo while from third month until birth is a fetus (Singh, *et al.*, 2007). Scotland obstetrician, Ian Donald (1956) first introduced diagnostic ultrasound in clinical medicine and was defined as the application of diagnostic medical ultrasound to visualize the embryo or foetus, placenta, mother's uterus, blood vessels and ovaries (Saleh, *et al.*, 2017).

Ultrasound application in obstetrics can either be elective or reactive (Tiran, *et al.*, 2009). Elective or planned use is the routine screening to detect potential problems in an uncomplicated pregnancy while reactive use means the application of ultrasound in the management of clinical problem such as fetal growth restriction (Tiran, *et al.*, 2009).

Pregnant women feel more at ease after obstetrics ultrasound scanning (Ikeako *et al.*, 2014); this is not just from the clinical results given but also quality of explanation given and attitude of the sonographer (Ugwu, *et al.*, 2016). High standards of patient care in developing countries are not considered as essential but desirable (Nwaeze, *et al.*, 2013). Quality health care is a factor closely related to compliance, effectiveness and continuity of care particularly for ethical issues (Nwaeze, *et al.*, 2013). The extent to which specific needs coupled with quality service delivery are given will determine patient satisfaction.

It has been observed that there is an increasing number of obstetrics scan ranging from first (1<sup>st</sup>) trimester, second (2<sup>nd</sup>) trimester and third (3<sup>rd</sup>) trimester obstetrics scan in the radiology department of Gombe State Specialist Hospital (GSSH). The level of satisfaction of patients presenting for obstetrics scan in this locality is scarcely described. The objective of the study is to evaluate the level of satisfaction in patients presenting for obstetrics scan in Gombe State Specialist Hospital and factors affecting the level of maternal satisfaction.

## **Materials and methods**

### **Study design**

A prospective study was carried out using convenient sampling technique to evaluate the level of maternal satisfaction

### **Source of data/instrument of data collection**

Primary source of data was used in the study. Data was obtained using a well-structured questionnaire design based on the parasuraman service quality model adopted from Eularnia, (2017). See appendix I. The questionnaires were administered to 160 patients who came and had ultrasound scan in SSHG.

### **Study population**

Study population was defined as the totality of individuals, objects, events or constructs about which the research is concerned (Zira, 2019). This study population will cover all pregnant women presenting for obstetrics ultrasound scan at GSSH within February 2020 and June 2020.

### **Sample size**

The sample size was obtained using the Taylors formula:

$$n=(Z^2pq)/d^2$$

n= minimum desired sample

z=confidence level at 95% (standard value of 1.96)

p=the prevalence (12% =0.12) (Ugwu, et al., 2009)

q=1-p (1-0.12) = 0.88

d= maximum sampling error at 95% confidence level of 0.05

$n = [(1.96)^2(0.12)(0.88)] / (0.05)^2$

n=162.3 (approximately 160)

### **Inclusion criteria/exclusion criteria**

All patients presenting for obstetrics scan in their first, second and third trimester were considered while patient presenting for scan other than obstetrics were excluded.

### **Data analysis**

Data was organized based on the age group classification, marital status, parity, occupation indication, perception information, level of education and level of satisfaction. Data was entered into excel spread sheet and statistical package for social sciences (SPSS) version 20.0 was adopted for normality test and overall analysis.

### **Ethical consideration**

Ethical clearance was obtained from the research and ethical committee of Gombe state Ministry of health, while the criteria for health research ethics were strictly adhered to.

### **Study duration**

The study was conducted for a period of four months from February 2020 to June 2020.

### **Results**

Table 1: Socio-demographic characteristics of the respondents

Characteristics	Frequency	Percentage (%)
<b>Age group</b>		
15-24	77	48
25-34	57	36
35-44	26	16
<b>Marital status</b>		
Divorced	2	1.3
Married	157	98.1
Single	1	0.6
<b>Employment</b>		
Unemployed	83	52
Employed	51	32
Self employed	26	16

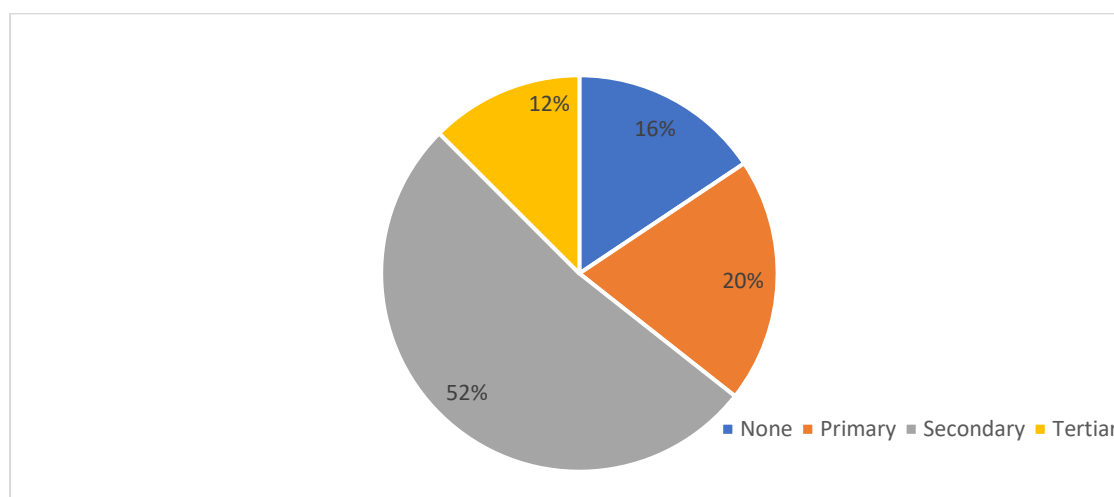


Fig. 1: The charts distribution of pregnant women according to their educational level

Table 2: Distribution of women based on parity

Parity	Total	Percentage
0	32	20
1	32	20
2	39	24.4
3	32	20
4	13	8.2
6	6	3.7
8	6	3.7

Out of 160 participants who responded in the study, 152 (95%) had ultrasound scan in their previous pregnancies. The purpose for ultrasound scan as perceived by the participants are as shown in Figure 2:

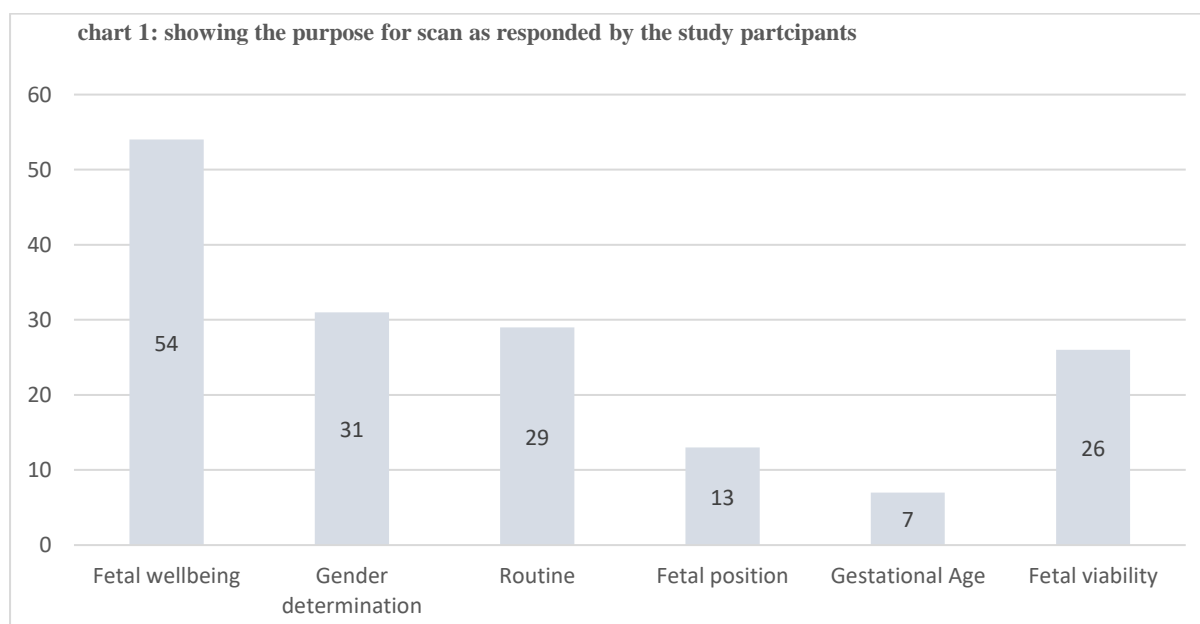


Fig. 2: Purpose for scanning

Out of the respondents (n=160), the dominant age group is 15-24, with the youngest participant aged 16 years. The predominant respondents are secondary school certificate

holders with 52% while only 12% have higher school certificate. The patient ratings of different aspect of care given before, during and after obstetrics scan while in the radiology department were shown in Table 3.

**Table 3: patients rating of different aspect of care during ultrasound scan**

Aspect of care	Satisfied		Unsatisfied	
	Frequency	Percentage	Frequency	Percentage
Feelings of attention given at the reception	154	96.25	6	3.75
Feelings regarding waiting area and waiting time	160	100	0	0
Feelings regarding the attending Sonographer	153	95.63	7	4.37
Feeling about the accuracy of ultrasound scan	147	91.88	13	8.12
Rate of overall procedure with respect to reliability	154	96.25	6	3.75

Table 3 showed different ratings of the respondents in various aspect of care given before, during and after obstetrics scan. There was total satisfaction from all the patients with regard to waiting area and waiting time, however highest level of un-satisfaction is recorded in the patient’s perception of the accuracy of the ultrasound scan, although the percentage is small with frequency of 13(8.12%) out of 160. Also, the level of satisfaction with regard to care given in to patient while in the reception and with regard to total reliability of the procedure as perceived by the patients is very high with 96% (154 out of 160) response and only 3% (6 out of 160) level of un-satisfaction. Regarding the way the sonographer attended to the patients, the level of response from the patients is 95.63% (153 out of 160) satisfaction and with only 4.37% (7 out of 160) un-satisfied.

Level of education influence the views of the respondents, it is found that highest level of un-satisfaction came from those that attained tertiary institution with 7 out of 20 unsatisfied.

**Table 4: Relationship between maternal levels of education to their satisfaction**

Level of Education	Satisfied		Unsatisfied		Total
	Frequency	Percentage	Frequency	Percentage	
None	25	15.6	0	0	25
Primary	32	20	0	0	32
Secondary	77	48.1	6	3.8	83
Tertiary	13	8.1	7	4.4	20
<b>Total</b>	<b>147</b>	<b>91.8</b>	<b>13</b>	<b>8.2</b>	<b>160</b>

**Discussion**

This study finds out the level of satisfaction of pregnant women at various aspect of patient care in the radiology department during obstetrics scan procedure. Factors explored include waiting area and waiting time, reception by the secretary at the reception before the scan, sonographer’s mode of handling the patient, accuracy rating of the scan procedure by the patient and overall reliability of the procedure as perceived by the pregnant women.

The study revealed that most of the respondents are within the age group of 15-24 years with one hundred and fifty-seven (157) being married. The study findings on age is similar to the findings of Zira et al (2017), titled ‘patient’s satisfaction and perception of care during obstetrics ultrasound scan’ in Bauchi, Nigeria, reason could be similar geographical and ethnic values of the study locations. However, it is contrary to the findings of Ijeruh et. al. (2019) titled ‘Assessment of the level patient satisfaction with obstetrics sonography in Port-

Harcourt, Rivers state, Nigeria. The reason for this could be differences in ethnicity and values.

The majority of the respondents believed that the main purpose of obstetric scan is to check for fetal wellbeing, this goes in line with a study conducted in Australia and Tanzania by Harris *et al.*, (2004), titled "seeing the baby": Pleasures and dilemmas of ultrasound technologies for primiparous Australian women and another study by Usman *et al.*, (2019) titled 'Assessment of utilization of obstetric ultrasound by pregnant women in a local government area of northern Nigeria' in Zaria, Nigeria. Also, the results showed that 19.4% of the respondents had obstetric scan for gender determination, this is in line with a study conducted by Ikeako *et al.*, (2014) titled 'Attitude of expectant mothers on the use of ultrasound in pregnancy in a tertiary institution' in south-eastern Nigeria. This reveals that there is emphasis on child gender in these two-research places and as such there is need for certainty and caution before revealing fetal gender to the mothers since there are always false positives and false negatives for gender determination and any wrong outcome may lead to conflict among married couples. In Sokoto, the reverse is the case as shown by a study conducted by Maaji *et al.*, (2010) titled 'Do women want disclosure of fetal gender during prenatal ultrasound scan?' where gender knowledge is perceived as "indifferent" mainly among the respondents.

In this study, all the patients were satisfied with the waiting area and waiting time, this could be due to the fact that the department was newly renovated with new machines and comfortable reception area prior to the start of the study. Also, their level of education influence the views of the respondents, this may be as a result that with increased level of knowledge, more level of awareness and health right. It is found that highest level of dissatisfaction came from those that attained tertiary institution this is in-line with the study of Abduljabbar, *et al.* (2020) titled 'knowledge, attitudes and practice about obstetrics ultrasonography among women attending a university hospital: a cross sectional study' in Jeddah, Saudi Arabia. This similarity may be due to the fact that their level exposure and awareness was more compare to those with lower level of education.

The overall satisfaction of the respondents with the radiology department during obstetrics ultrasound scan is 96.25% this may be attributed to the fact that the patients were fully satisfied with the waiting time and waiting area. Also, the reliability of the procedure as a whole and the way they are attended to by the sonographers. This is similar to the findings of Zira *et al* (2017), titled 'patient's satisfaction and perception of care during obstetrics ultrasound scan' in Bauchi, Nigeria; the reason for this similarity may be as a result of similar method of data collection and analysis.

### **Conclusion**

Obstetrics scan is considered to be a major examination among pregnant women for confirmation of fetal wellbeing and gender. There was high level of satisfaction by the participants on waiting time and waiting area of state specialist hospital, Gombe. The study emphasizes the need for careful evaluation and accurate gender determination for an increased patient trust and confidence in obstetrics scan. In addition, level of education and exposure by pregnant women is a key factor in expecting more from obstetric scan.

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APPENDIX I  
QUESTIONNAIRE

Date .....

Study number .....

Participants' information

1. Age.....

2. Gestation .....

3. Parity .....

4. Highest education received

None 1	Primary school 2	Secondary school 3	Higher education 4
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5. Employment

Employed 1	Unemployed 2	Self-employed 3	Other 4
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6. Relationship

Married 1	Divorced 2	Single 3	Widow 4
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7. Have you had a previous scan?

Yes 1	No 2
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8. Pregnancy planned

Yes 1	No 2
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9. What are your expectations from this scan?

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10. What are your feelings about the scan?

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11. Where did you get your information regarding scans from?

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12. What do you think is the purpose of scans in pregnancy?

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13. Regarding the scan, do you have any concerns relating to yours or babies health?

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 .....  
 .....  
 .....

14. Do you know the following concerning the scan?

i. Fetal heart detection ( baby is alive)

	Yes	No
	1	2

ii. Sex determination (boy or girl)

	Yes	No
	1	2

iii. Gestation calculation (how many months pregnant)

	Yes	No
	1	2

iv. Presence of abnormality (baby not normal)

	Yes	No
	1	2

v. Presence of multiple pregnancy ( more than one baby)

	Yes	No
	1	2

15. What are your feelings regarding the way you were attended to in the reception?

- i Satisfied
- ii Unsatisfied

16. How accurate do you think is the scan you just had? Satisfied { }

17. If unsatisfied, why?

.....  
 .....

18. What are your feelings with regard to the waiting area and waiting time?

- i Satisfactory
- ii Unsatisfactory

19. How do you feel with regard to the way the sonographer attend to you?

- i. Satisfactory
- ii. unsatisfactory

20. How could you rate the overall procedure with regard to reliability?

- i. Satisfactory
- ii. Unsatisfactory