



MAKERERE

UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICINE

DEPARTMENT OF RADIOLOGY AND RADIOTHERAPY

**KNOWLEDGE AND PRACTICES OF PREGNANT WOMEN TOWARDS
SONOGRAPHY IN AWACH HEALTH CENTRE IV, GULU DISTRICT**

BY

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**A RESEARCH REPORT SUBMITTED TO MAKERERE UNIVERSITY SCHOOL OF
MEDICINE IN PARTIAL FULFILMENT OF AWARD OF BACHELOR IN MEDICAL
RADIOGRAPHY**

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Dedications

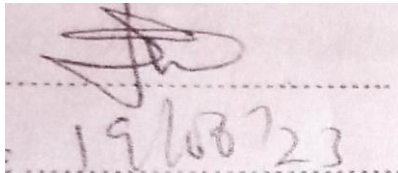
I dedicate this research to my parents Mr Ongom tom and Mrs Christine Ongom and my brothers Mr Okoya Leo and Mr Akera Denis not forgetting my sisters Mrs Lacao Jenifer, Mrs Aringo Monica, Mrs Aculu Margret and Mrs Anyeko Agnes as well as my class mates may almighty God bless you abundantly

Declaration

I declare that this research report was my original work and has been provided to the best of my knowledge With guidance of my supervisor.

Name :KOMAKECH ERICK

SIGN AND DATE

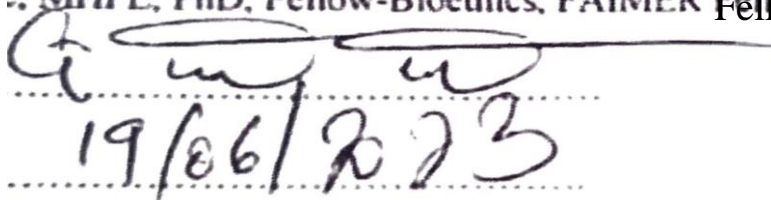


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ABSTRACT

Introduction:

Ultrasound is noninvasive imaging modality used to image fetus in utero , In Uganda, it is recommended that all mothers should have an ultrasound scan done in the second or third trimester (Uganda Clinical Guidelines, 2016) ,Routine ultrasound in pregnancy is useful for the determination of multiple pregnancies and gestational age and may be associated with a lower likelihood of inductions after 42 weeks, Anna *et al*, (2016) this study aimed at establishing the knowledge and practices of pregnant women on ultrasonography in Awach health Centre iv Gulu district

Objective:

This study aimed to establish the knowledge and practices of pregnant mothers on ultrasonography in Awach health Centre iv Gulu district

Methods:

A descriptive cross-sectional study was used involving 60 pregnant women who reported for antenatal clinic in Awach health center iv Gulu district, convenience sampling technique was used to recruit the participants in the study, the data was collected using interviewer administered questionnaires and was analyzed quantitatively into descriptive tables, percentages and graphs

Results

The study had a response rate of 100%. Most participants had good knowledge of obstetrics ultrasound scan. However there was misconception that ultrasound has harmful effects .generally participants had a positive attitude but poor practices towards obstetrics ultrasound scan . long waiting time and lack of privacy were reported by most participants as leading factors that contributed to the poor practices

Conclusion

This study shows that knowledge of pregnant women towards obstetrics ultrasound in Awach health Centre IV were good. However, their practices were poor. the concern that needs to be addressed to improve their practices including patient's privacy, waiting time, unavailability of radiographer and the misconceptions regarding the safety of ultrasound that it can cause cancer to mother and unborn baby.

LIST OF ABBREVIATIONS

ANC antenatal clinic

IGUR intrauterine growth restriction

NMR: Neonatal Mortality Rate

UCG Uganda clinical guideline

US: Ultrasound Scan

WHO world health organization

DEFINATION OF KEY TERMS
ECTOPIC PREGNANCY

presence of foetus in position other than the body of the uterus. It can be in the fallopian tubes, cervix, abdomen, etc.

PRACTICES

the actual application or use of an idea of ultrasonography by pregnant women

KNOWLEDGE

facts, information, and skills acquired through experience or education regarding ultrasonography by pregnant women

SONOGRAPHY

Sonography is a diagnostic medical procedure that uses high-frequency sound waves (ultrasound) to produce dynamic visual images of organs, tissues or blood flow inside the body.

PREGNANCY

the condition of having a developing embryo or fetus in the body, after union of an oocyte (ovum) and spermatozoon

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CHAPTER ONE

BACKGROUND TO THE STUDY

1.0 Introduction

This chapter presents the introduction to the study, problem statement, study objectives, research questions, and justification of the study and the study scope.

1.1 Background

Globally, the utilization of obstetric ultrasound scans by pregnant mothers varies greatly from one country to another. For instance, in rural eastern China found very high demand for antenatal ultrasound scan, and this was influenced by various socio-demographic and clinical factors such as availability of support, availability, and accessibility of services as well as improved access to information among others (Huang *et al.*, 2012). Countries like Venezuela, found low utilization obstetric ultrasound scan services due to factors such as high costs, poor service coverage as well as lack of awareness about its benefits (Mullan *et al.*, 2015).

Routine ultrasound in pregnancy is useful for the determination of multiple pregnancies and gestational age and may be associated with a lower likelihood of inductions after 42 weeks, Anna *et al.*, (2016). In Sub Saharan Africa, the early utilization of obstetric ultrasound scan by pregnant mothers also varies. For example, in Lagos State, Nigeria, found increased demand of obstetric ultrasound scan by pregnant mothers. This was attributed to factors such as the education level of the couple, especially the head of the household, improved socio-economic status among other factors (Ugwu *et al.*, 2016).

In Uganda, it is recommended that all mothers should have an ultrasound scan done in the second or third trimester (Uganda Clinical Guidelines, 2016). Low early utilization of obstetric scan services among pregnant mothers leads to many detrimental effects such as maternal and neonatal deaths, yet obstetric ultrasound scan is a widely accepted component of antenatal care and it could be used to detect a pregnancy as early as 5 weeks (Becker *et al.*, 2016). Furthermore, pregnant women who did not use ultrasound scans were more predisposed to conditions such as uncertain menstrual dates, abnormal pregnancies e.g. ectopic, molar, etc., and pelvic masses (Swanson, 2017).

According to a descriptive cross-sectional study done among 30 pregnant women in Wakiso district in Uganda on factors influencing utilization of obstetric can among pregnant mother (Nakimera, 2012), most pregnant women 18 (60%) used the services in the 3rd trimester, followed by 5 (25%) who used the services in the 2nd trimester while the least 3 (15%) used

the services in 1st trimester of which delays diagnosis and early management and prevention of danger signs in of pregnancy. It is important to establish the knowledge and practices of pregnant women at Awach health Centre IV in Gulu district. The purpose of the study was to assess the knowledge and practices of pregnant women towards ultrasonography at Awach health Centre IV, Gulu district

1.2 Problem statement

There has been a gradual decrease in early utilization (first and second trimesters) of obstetric ultrasound scan among pregnant women in Awach health centre IV despite the increased numbers of pregnant mothers seeking the service. This has reduced from 30% in 2019 to 26 % in 2020 and 22% in 2021 (HIMS report, December 2021) of which all these percentages are also low according to according to WHO which recommends at least one obstetric scan before 24 weeks of pregnancy. This has led to delayed diagnosis, prevention and management of problems associated with early pregnancies and has resulted into increased missed abortions and admissions (average of 50 admissions in per month in 2018 to 100 admissions in 2020) since pregnant mothers come already with the danger signs of pregnancy which has led to work overload for the staff and loss of productivity of the mothers due to much time spent in the health centre

There is also overcrowding in maternity ward, leading to cross infections and an increased expense on medication and upkeep of mothers in the hospital since there is no food provided by the health centre.

Despite the interventions, there is still a decrease in the number of pregnant mothers seeking to do scan in the first and second trimesters, an increased number of missed abortions and gaps in the knowledge and attitudes of both the health care workers and pregnant mothers towards uptake of US in the early stages of pregnancy is a challenge. Effectiveness of interventions put by the administration and adherence to the guide lines needs to be looked at. The current reasons for the gradual decrease in early utilization of ultrasound scan among pregnant mothers are unknown, hence the need to study the knowledge and practices of pregnant women on early utilization of obstetric ultrasound scan in order to guide decision making by the administrators of health centre.

1.3 Justification of the study

The results were shared to Awach health Centre IV and Gulu District Health Department about knowledge, and practices of pregnant women on ultrasonography. The findings was shared to antenatal clinic Awach health Centre concerning their knowledge and practices and message used in creating awareness through health education.

1.4 General objective

The general objective of the study was to assess the knowledge and practices of pregnant mothers on ultrasonography at Awach health Centre IV.

1.4.1 Specific Objectives

1. It was to explore the knowledge of pregnant women on ultrasonography at Awach health Centre IV
2. It was to determine the practices of pregnant women on ultrasonography at Awach health Centre IV

1.5 Research questions

1. What were the knowledge of pregnant mothers on ultrasonography at Awach health Centre IV in Gulu District?
2. What were the practices of pregnant mothers on ultrasonography at Awach health Centre IV in Gulu District?

1.6 Scope of the study

1.6.1 Geographical scope

The study was carried out among pregnant mothers attending antenatal Awach health Centre IV in Gulu District, Northern Uganda.

1.6.2 Content scope

The research was restricted to determining the knowledge and practices of pregnant women towards ultrasonography at Awach health Centre IV

1.6.3 Time Scope

The study run from June 2022 to June 2023

CHAPTER TWO

LITRATURE REVIEW

2.0 Introduction

This chapter present the literature review categorized under two themes. The first theme was reviewing studies and scholarly material and publications that was reviewed the knowledge of obstetric ultrasound among pregnant women. The last theme focusses on the practices of pregnant mothers on ultrasonography.

2.1 Knowledge on sonography among Pregnant Women

A cross-sectional study was conducted during 2018-2019 among 367 women which included all women that attend the OB/GYN outpatient clinic at KAUH in Jeddah showed that majority of participants had high knowledge (93%) which were highly educated and those who get high monthly salary while only 7% showed little knowledge (Abduljabbar et al., 2020)

A cross-sectional study done in public hospital Ethiopia, out of 419 pregnant women, only 148 (35.3%) respondents had good knowledge of obstetrical ultrasound, while the rest (271, 64.7%) had poor knowledge of obstetrical ultrasound in which some of the indications for obstetrics ultrasound was to determine sex (89%),confirm pregnancy (79.2%) and least mentioned by respondent was detecting congenital anomaly (Molla, Mengistu, & Wudneh, 2022)

In a study done of about 500, unselected pregnant woman, of gestational age between 16 and 20 weeks were asked to fill in a questionnaire containing defined and open-ended questions showed that they received information, either from the family doctor or as written material from the hospital (or both), concerning the purpose of the obstetrics ultrasound in that, literature/newspaper/TV, family and friends played an important role as sources for general information. Their reason for ultrasound examination was to ensure that the fetus was alive, healthy and without any malformation (Larsen, Nguyen, Munk, Svendsen, & Teisner, 2000)

A descriptive cross sectional study carried out in Sri Manakula Vinayagar medical college and hospital, Puducherry, India between the periods of April 2014 to July 2014 of which 300 pregnant women were selected by simple random sampling among patients attending the antenatal clinic for routine check-up the study majority of participants stated that indication for obstetrics ultrasound was determine sex in utero, and it safe and essential , in addition to

that most information they get from health workers and role of media was negligible (Krishnamoorthy & Kasinathan, 2016)

A prospective and cross-sectional study conducted among 400 pregnant women that attended antenatal ultrasound scan at AKTH showed that almost all the participants (97%) had ultrasound before, and they believed it is safe furthermore, majority (93.8%) believed that ultrasound is necessary during pregnancy. Majority believed it is done to determine fetal viability and wellbeing (Saleh et al., 2017)

(Mensah, Nkyekyer, & Mensah, 2014) wrote that Most respondents perceived antenatal ultrasound as a useful tool however, there is lack of information flow from health care providers to clients concerning the indications for the ultrasound, the processes involved and the results of the procedure researcher recommends Improvements in these areas are needed to enhance the experience of antenatal ultrasound among Ghanaian women.

(Oche et al., 2013) Wrote that majority, (96.4%) of the respondents had good knowledge of ultrasound and it uses the Main reason for having a scan was to check the state of the fetus (38%); a total of 28.3% of the respondents had previously been given false information from the scan results mostly about the expected date of delivery (EDD). some of them still harboured fears about the safety of the procedure to the fetus and mother researcher recommends need for continuous education of the general public who are the end users of ultrasound scanning to allay their fears and misperceptions concerning the safety of the procedure

A study done in one of private, regional radiology practice in New South Wales, Australia between 16th May and 14th June 2019 showed that Participants with previous personal experience had significantly higher levels of ultrasound imaging knowledge than those whose primary information source was their referring doctor or the internet (Starceвич, Lombardo, & Schneider, 2021)

2.2 PRACTICES OF PREGNANT WOMEN ON SONOGRAPHY

Firth, Mlay, Walker, & Sill (2011) wrote that few of respondents said they did not want ultrasonography, nevertheless since the service was introduced no woman has declined, and numerous interviewees believed scans were obligatory. Despite fears, some women reported enjoyment of ultrasound. Interviewees believed ultrasound would increase antenatal care (ANC) attendance.

A cross-sectional descriptive study and was done on 200 pregnant mothers attending antenatal care in Zaria Local Government, Kaduna State, and Northern Nigeria. The study showed that 83.5% (167) of pregnant mothers had utilized obstetric ultrasound. The main reason for the use of obstetric scan was to know fetal viability. Other reasons included sex determination, assessment of EDD and for routine scan (Usman, Olorunkoba, Umar, & Idris, 2019)

An institutional-based cross-sectional study was conducted on 303 pregnant women attending antenatal care (ANC) from July to August 2021 in Jimma town public health care facilities found that majority of respondents used prenatal ultrasound during their pregnancy, out of which most of it are requested by clinicians furthermore first Time (GA) of first O/U utilization of 44(23.9%) of the respondents were during their third trimester (after 24weeks) (Yetwale, Kabeto, Biyazin, & Fenta, 2022)

A descriptive cross-sectional study that involved 300 pregnant women who reported for obstetric sonography at Mulago hospital in Kampala, Uganda, the study shows that the majority of participants showed having high knowledge. However, their practices were poor this was contributed by poor patient's privacy, long waiting time and the misconception regarding the safety of ultrasound that it can cause cancer. (Maniragena, Kasozi, Mubuke, & Murachi, 2021)

This was a questionnaire-based cross-sectional study conducted among 198 consenting pregnant women attending prenatal care at Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Nigeria. The study showed participants were highly aware of the important of ultrasonography in pregnancy confirmation, dating and fetal viability were common reason for referral however others were vaginal bleeding, fetal sex determination

and estimated date of delivery. As a result, are always willing to carryout prenatal ultrasound even without doctors' request. (Nweke et al., 2020)

The cross-sectional study was conducted in pregnant women attending the ANC clinic of Obstetric department of D. Y. Patil Medical College Hospital, Kolhapur, Maharashtra, India showed that Majority done USG in this pregnancy, of that more (43.45 %) in second trimester and mainly advised by doctors however Nearly half of them considered its expensive procedure, in spite of them would recommend other pregnant women to undergo USG in pregnancy the study also showed that respondent said it should be done twice in pregnancy and majority considered USG as safe and beneficial(Yadav & Yadav, 2017).

Huang et al. (2012) Reported that high utilization of antenatal ultrasound scans was observed where Maternal age, maternal and husband education level, family income, parity, antenatal care and pregnancy complications were found to be associated with high ultrasound use.

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.0. Introduction

This chapter present the study design, study area, study population, sampling technique, sampling procedures, sample size, data collection methods, selection criteria, ethical consideration and analysis of data.

3.1 Study Design

A descriptive cross-sectional study design was used employing quantitative research approach. Cross sectional study design is a type of research design where the researcher collected data from different individuals at a single point in time without influencing the variables (Shokooh *et al*, 2019). This design was chosen because it is a cheap, convenient and time saving to the researcher. A descriptive cross-sectional design was employed where the said outcomes of the research objectives was summarised using descriptive statistics

3.2 Study Area

The study was carried out in Awach H/C IV, Gulu District. Awach H/C IV is located in Awach Sub County, Aswa County headquarter. The facility centre was established in 1931 (Personal communication, 2019b). The health facility is situated in northern Uganda about 371km by road from Uganda's capital city, Kampala, and 31km from Gulu municipality (Calculator, 2015). It serves as a major referral site for all the twenty (20) health facilities in Aswa Health sub-district covering the sub-counties of Awach, Paicho, Unyama, Bungatira, Patiko, and Palaro. The health facility has a bed capacity of 28 both in maternity and general wards with a catchment population of twenty-one thousand nine hundred nineteen (21,919) people (Awach Health Centre IV, FY2018/2019). The health centre has various clinics such as outpatient, post-natal, ART clinic, maternity, outpatient departments, antenatal, maternity, general ward among others. The study was conducted in an antenatal clinic. This area was chosen because it has a very large catchment population covering all the five sub-counties outside Gulu municipality where women come from peri-urban, semi-urban and others from typical village locations.

3.4. Sampling technique

simple random sampling technique was used to select pregnant mothers attending ANC services at Awach Health Centre IV for those that consented because this depended on the pregnant women who were available at that time of data collection.

3.5. Sampling procedure

The study employed random sampling method to select participants that included mothers attending antenatal care services at Awach Health Centre IV. The procedure was used because it enables the researcher to achieve the sample size wanted in a relatively fast and inexpensive way. Because the study focuses on pregnant women attending ultrasonography at Awach Health Centre IV, random sampling method is a good method to achieve the study objectives. Based on eligibility criteria; mothers were consecutively enrolled in the study until the required sample size was achieved.

3.6 Sample Size Determination

Pregnant women who reported for obstetrics ultrasound scan within the study period were included. Each participant was allowed to participate once however, pregnant women with emergencies and those who later decline their participations and withdrew from the study were be excluded. Overall, the study recruited 60 respondents.

3.7. Study Population

The study participants were pregnant women attending antenatal clinic at Awach health Centre IV Gulu district. It included women of all parity and education levels.

3.7 Participant selection

3.7.1 Inclusion Criteria

The study selected;

- a. All pregnant women of any parity or gravidity who consented and who can hear and have a sound mind.
- b. All pregnant women of all background in the catchment area of Awach health Centre iv

3.7.2 Exclusion criteria

The study excluded;

- a. All pregnant women who were referred from areas not including the catchment area of Awach health Centre IV
- b. All pregnant women that did not consent and those without a sound mind.
- c. Pregnant mothers on emergencies.

3.8. Data Collection Method

A self-administered questionnaire was given to the selected participants to answer after briefing them and getting informed consent. Assurance of confidentiality were given to avoid bias in answering the questions. The questionnaire had both open and closed ended questions.

Assistance was offered for those who needed more understanding of the questions to avoid misinterpretation of the questionnaire. The questionnaires had questions that assess socio demographics details, knowledge regarding antenatal ultrasound scan and practices regarding antenatal scan

3.9. Data Quality Control

The questionnaires were in simple English to avoid misunderstanding but for those unable to read but understands and speaks English, the questionnaires were orally read to them and assistance were given to them to answer the questions. And for those who do not know English, the questionnaire was translated in Luo for them to understand properly and answer accordingly. Explanations were given to the participants requiring help to understand the terminologies.

3.9 Ethical Consideration

The research report was submitted to the department of Radiology and radiotherapy, College of Medicine, school of Health Science, Makerere University and was approved. Introductory letter was obtained from College of Medicine, department of Radiology and Radiotherapy, Makerere University. The research proposal and letter of introduction was used in gaining access to the Awach Health Centre IV in Gulu District. Permission was granted from the In charge Awach health Centre IV, Local LC1 and District Health Department and research participants before the start of data collection.

3.9.1 Privacy and Confidentiality

The participants' names and hospital numbers were not included in the questionnaires. During the data collection time no person was allowed to examine the data collected except the persons assisting in conducting the study. After submission of the dissertation the questionnaires were discarded. All data were kept confidential and private

3.9.2 Informed consents

The participants were informed about the research and were assured that participation is totally voluntary. The general goal of the study and informed consent was explained before the start of data collection. Participation in this study was purely voluntary and respondents were requested to decide to take part or not. The participants were clearly told that they were free to choose to stop at any level even after starting to answer the questionnaires. When respondents agreed to take part in the study, they were requested to consent verbally or sign and retain a copy of informed consent.

3.9.3 Risks and benefits

The study was only done for academic purposes. There were neither risks nor monetary benefits to the participants since it only involved answering the questionnaire. The researcher did not have any monetary benefits from carrying out the study.

3.10. Data Processing

The data collected was assessed and the incompletely answered questionnaires were excluded and the ones legible for examination were kept together.

The data collected was analysed manually using scientific calculators in predesigned tables. The information was tallied and then the figures manipulated to derive percentages and any derivations relevant to interpretation of the raw data was obtained. Microsoft excel 2019 was used to compute the obtained data.

3.10.1 Statistical Methods

Statistical charts were produced using Microsoft Excel 2019 to assist in easier examination and interpretation of the data during analysis.

3.11. Dissemination

Results from the study were disseminated to Makerere University School of Medicine, Radiology Department, Awach health Centre IV and Research Supervisor

4.0 CHAPTER FOUR (PRESENTATIONS OF RESULTS)

4.1 Demographic information

Table 1: showing demographic information

AGE	FREQUENCY	PERCENTAGE (%)
< 20yrs	15	25
20-29 yrs.	40	66.7
30-39 yrs.	15	25
≥ 40yrs	02	3.3
EDUCATION STATUS		
None	30	50
Primary	16	26.7
Secondary	08	13.3
Tertiary	06	10
RELIGIONS		
Catholics	20	33.3
Anglican	28	46.7
Seventh day Adventist	02	3.3
Jovah witness	00	0
Pentecostals	04	6.7
Muslims	06	10

A total of 60 pregnant women were selected there was 100% response rate. the study showed majority were at the age of 20-29 years 40 (66.7%) while only 2 (3.3%/) were at the age of 40 years and above as shown in table 1 above.

half of participants 30 (50%) have not attended school while only 06 (10%) have attained tertiary level of educations

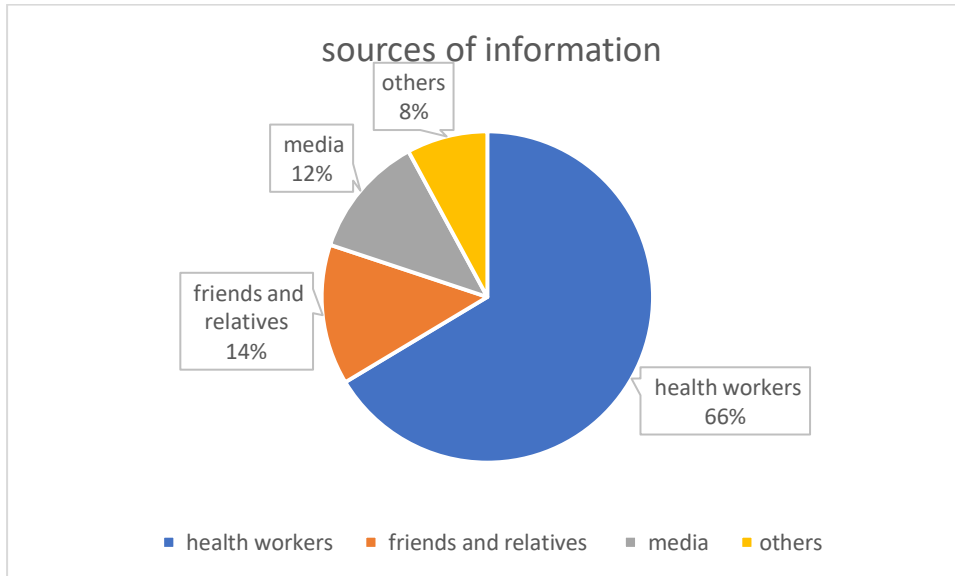
majority of participants are Anglican and Catholics 20(33.3%) and 28(46.7%) while only 02 (3.3%) are seventh day Adventist and non are Jovah witness

4.2 Knowledge about ultrasound among pregnant mothers attending antenatal care at Awach health centre

Source of information about ultrasound scan

50(83.3%) had heard about ultrasound scan and this information the majority 66.7% (40) from health workers while others from friend/relatives and media as shown in figure 1, however 10 (16.7%) have not heard about ultrasound scan

Figure 1 showing source of data about antenatal ultrasound scan



Majority of participants 22(36.7%) do ultrasound scan at gestation age 4-6 month of age while few participants are not sure when they are supposed to do antenatal ultrasound scan 4(6.7%) as shown in figure 2

Figure 2: showing months which ultrasound scan can be done

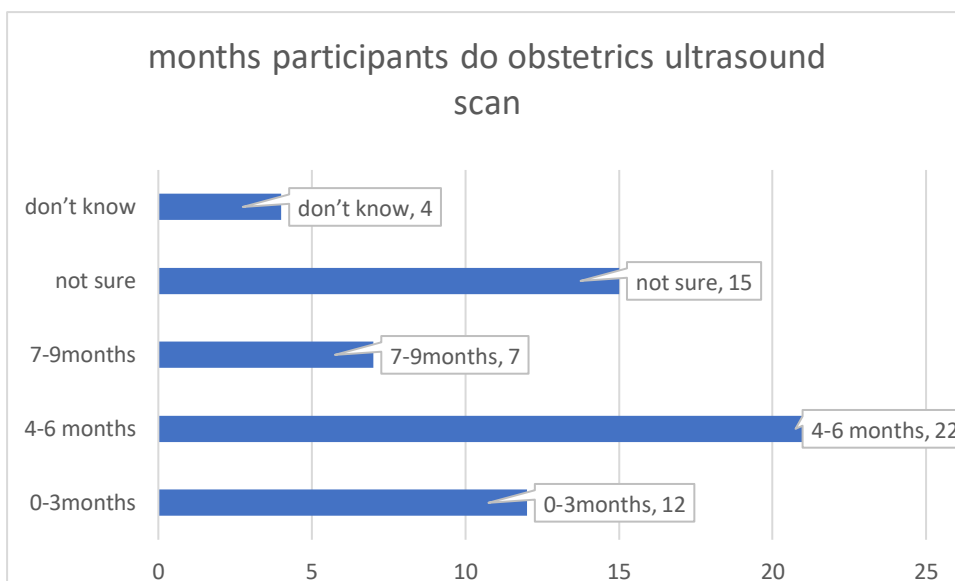


Table 2: showing knowledge status regarding antenatal ultrasound scan done

	agree	disagree	Neutral	Don't know
Ultrasound scan is important during antenatal care	50 (83.3%)	2 (3.3%)	1 (1.7%)	7 (11.7%)
Ultrasound scan can cause harmful effects to your unborn baby or you (mother)	40 (66.7%)	5 (8.3%)	9 (15%)	6 (10%)

Table 3: showing use or important of ultrasound scan

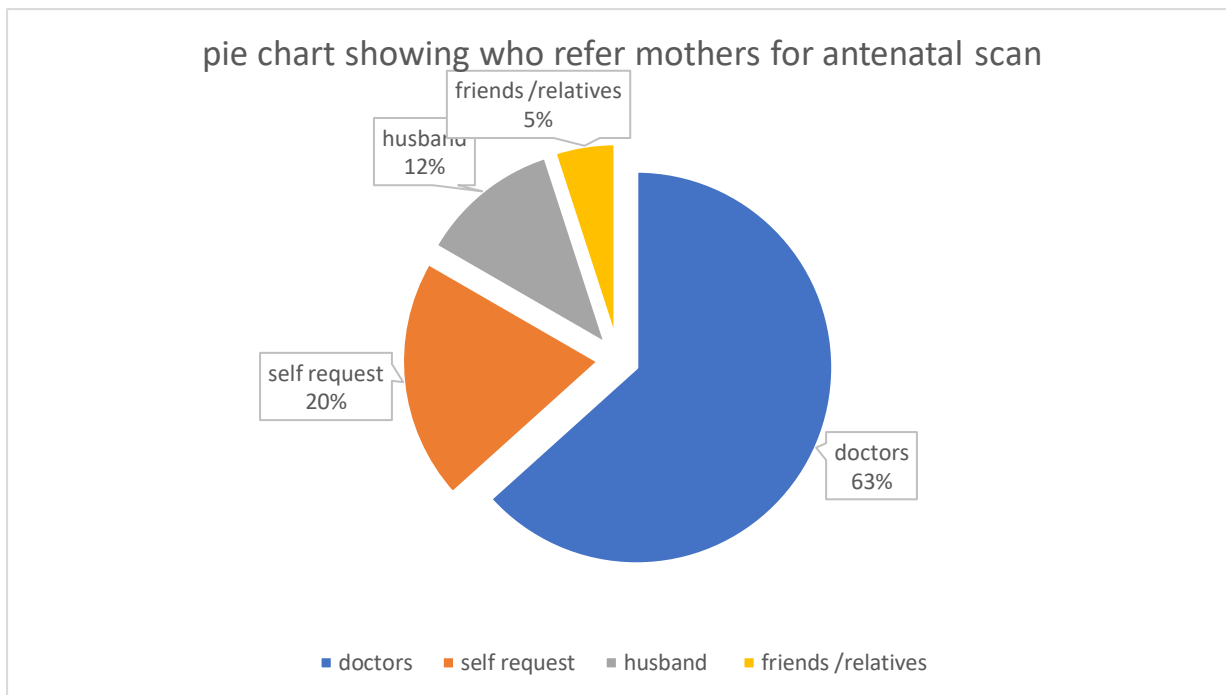
Status	agree	disagree	Neutral	disagree
Determine age of pregnancy	52 (86.7%)	1 (1.7%)	2 (3.3%)	5 (8.3%)
Determine date of delivery	52 (86.7%)	2 (3.3%)	4 (6.7%)	5 (8.3%)
Sex of baby	40 (66.7%)	6 (10%)	4 (6.7%)	10 16.6%)
Fetal well being	32 (53.3%)	5 (8.3%)	10 (16.7%)	13 (21.7%)
Asses liquor if adequate or not	20 (33.3%)	5 (8.3%)	20 (33.3%)	15 (25%)
Use to detect any anomalies	15 (25%)	25 (41.7%)	15 (25%)	5 (8.3%)
Manage complications of pregnancy	40 (66.7%)	6 (10%)	4 (6.7%)	10 (16.6%)
Determine fetal lie or presentations	40 (66.7%)	6 (10%)	4 (6.7%)	5 8.3%)

Majority of participants know that ultrasound scan is important during antenatal while majority also have misconceptions that ultrasound scan cause harmful effects to their unborn baby and to themselves as shown in table 3 above.

4.3 PRACTICES OF PREGNANT WOMEN ON SONOGRAPHY

42(70%) participants have already done ultrasound scan for their current pregnancy and most request were made by doctors as shown in figure 4 however 18 (30%) of participants have not yet done antenatal ultrasound scan for their current pregnancy

Figure 3: showing who referred mothers for antenatal ultrasound scan



Majority of participants 25(59.5%) did their antenatal scan between period of 4-6 month while only 2(4.8%) did at or before the first trimester shown in figure 4 and also majority did their scan only once 30 (50%) for the current pregnancy as shown in figure 5

Figure 4: showing months participants did their ultrasound scan

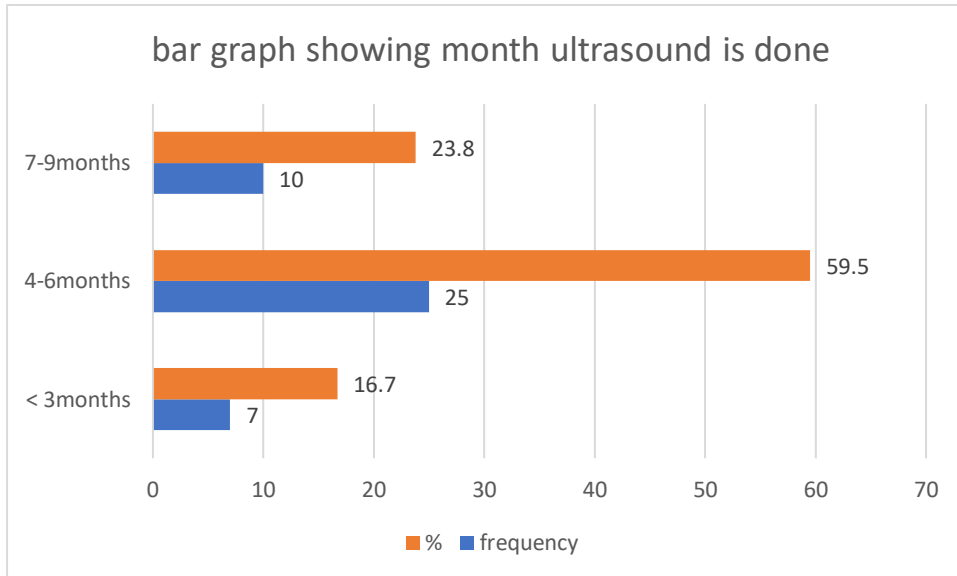
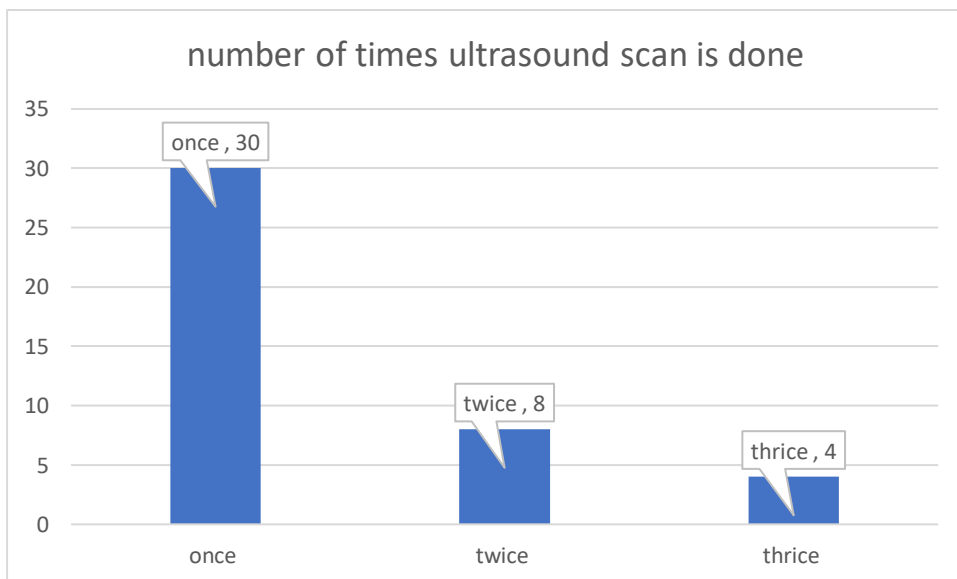


Figure5: showing number of times participants have done ultrasound scan for their current pregnancy



Most of reason for antenatal scan is to determine sex of unborn baby and know fetal lie and presentations 25(41.7%) and 20 (33.3%) respectively while some because of urinary tract 2(3.3%) infections and abdominal pain 3 (5%) as shown in figure 6

Figure 6 showing reason for antenatal ultrasound scan

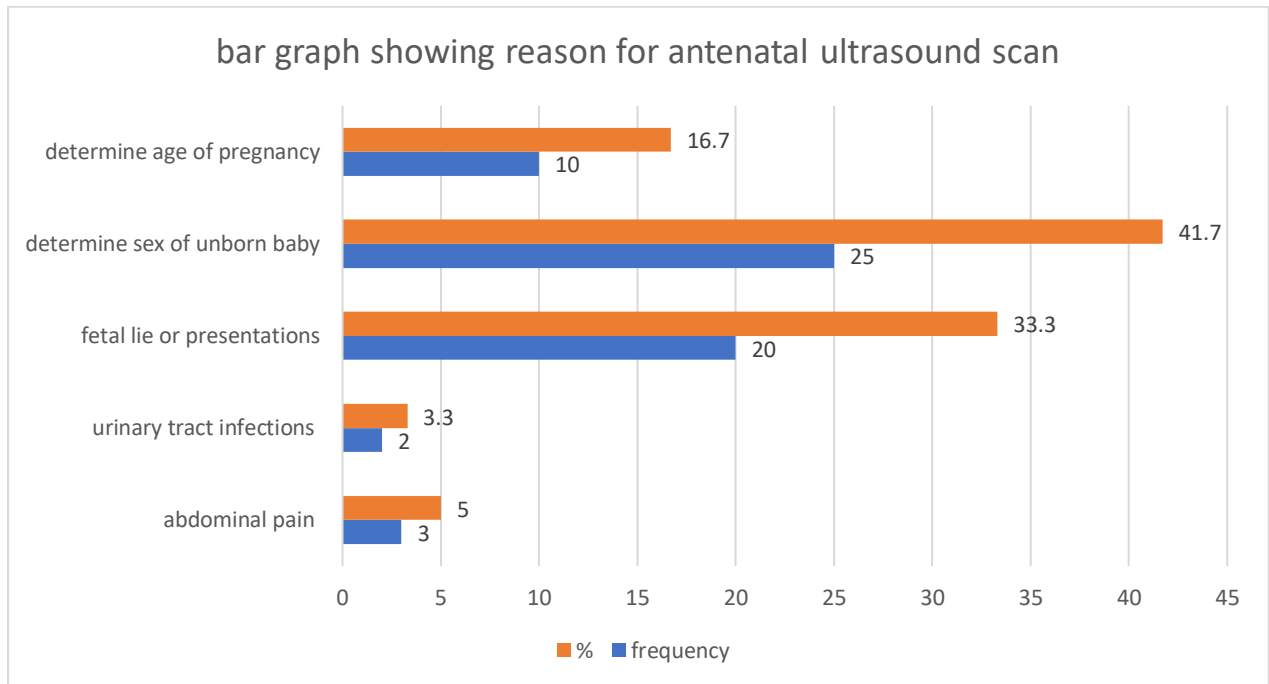
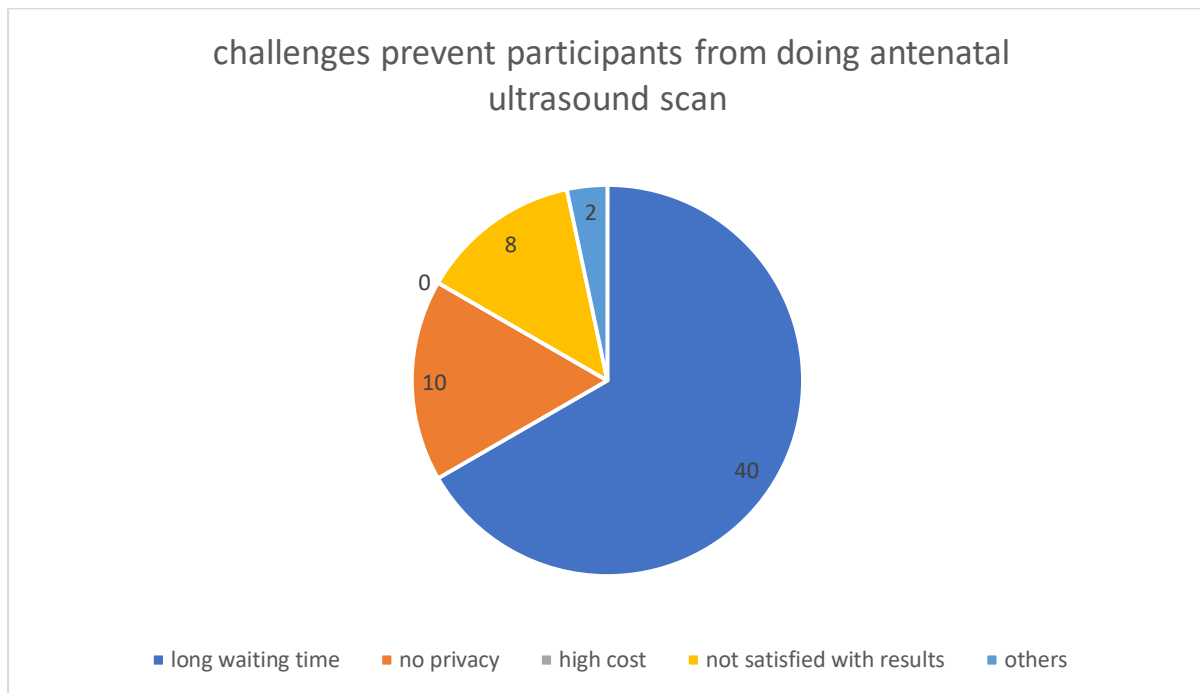


Table 3: showing conditions under which participants are willing to do antenatal ultrasound scan

Conditions	Yes	No
Complication of pregnancy	38 (63.3%)	22 (36.7%)
Age of pregnancy	55 (91.7%)	5(8.3%)
Determine sex of fetus	51 (85%)	9 (15%)
Detect if any fetal anomaly	20 (33.3%)	40 (66.7%)
Confirm pregnancy	34 (56.7%)	26 (43.3%)
Other specify (fetal lie or presentation, asses liquor, complications of pregnancy)	46 (76.7%)	14 (23.3%)

Majority of participants are willing to do antenatal ultrasound scan because of following conditions to determine sex of unborn baby 51(85%), determine age of pregnancy 55(91.7%) and others like determine fetal lie and asses liquor which were mention by pregnant mothers (46(76.7%)) as shown in table 3 above.

Figure 7: showing challenges that prevent participants from doing antenatal ultrasound scan



40 (66.7%) of participants stated that long waiting time and no satisfactions with antenatal ultrasound scan 8(13.3%) also among other conditions mention by participants was distance from health facility, unavailability of staffs on duty to work on pregnant mothers are among the challenges even do service is free from health centres

5.0 CHAPTER FIVE: DISCUSSION OF RESULTS

5.1 Demographic information

The response rate to the questionnaire was 100%, this was because of convenient sampling methods technique used to recruits the participants into this study. the researcher selected participants who were available at time of study and those attending antenatal clinics at the time of study until sample size was obtained also the questionnaires interviewer self-administered which made it easy for participants and this increased the response rate as well minimising errors that would results from misinterpretations similarly response rate has also been reported in related studies by Yetwale, Kabeto, Biyazin, & Fenta, 2022

In this study, most participants were within age group 21-30years which agrees with results being developing countries such as Uganda where there is because of early marriages most common in early 20s unlike in developed countries. the trend in this age group is because of low literacy rate of our participants may be due to early marriage due to school drop out since majority have not gone to school and some just attained primary leaving examinations. However few participants were in age of 40yrs and above this is because at this age most women go into menopause

5.2 knowledge regarding ultrasound scan among pregnant women

The knowledge regarding the use of ultrasound during pregnancy was generally good among participants this finding has been reported by similar studies Abduljabbar et al., 2020 Molla, Mengistu, & Wudneh, 2022 and Krishnamoorthy & Kasinathan, 2016 and also Oche et al., 2013 were most participants reported the importance of ultrasound in antenatal such as sex, determination, age of pregnancy, asses fetal wellbeing, estimate date of delivery and the management of delivery.

this is possibly due to most participants got their information from health workers, family and friends and mass media which provided them with wide range of knowledge regarding use of ultrasound similar study also reported that source of information was from health workers by Larsen, Nguyen, Munk, Svendsen, & Teisner, 2000

The awareness was least for assessing fetal abnormalities of the baby, this is because of majority did their ultrasound in third trimester of pregnancy when ultrasound scan is less indicated for this purpose.

There are misconceptions regarding the safety of ultrasound implying that awareness regarding the safety of ultrasound was lacking as opposed to study done by Yadav & Yadav,

2017 were participants stated that ultrasound is importance during antenatal care and it's safe during pregnancy

This misconceptions from our participants, most of whom obtained information from the hospital, was possibly because the information regarding the safety of ultrasound was not provide by health workers to pregnant women. this necessitates provision of information regarding the safety of ultrasound in health education during antenatal care.

5.3 Practices regarding ultrasound scan among pregnant women

The practices towards obstetrics ultrasound scan were generally poor as opposed to study reported by Saleh et al., 2017 where compliance of women to do the scan was likely due to perceived benefits they are expecting from the scan

In this study most participants had done only one ultrasound scan for their current pregnancy and over 50% had not done any ultrasound scan whereas very few had done it three times and more yet the majority were in third trimester of pregnancy. these findings are most likely due to the perceived poor services characterised by long waiting time, distance from health services, unavailability of staffs on ground to do the scan, no privacy and not satisfied with ultrasound scan results which discourages pregnant women from attending obstetrics routinely. this is in line with the finding of similar study by Maniragena, Kasozi, Mubuke, & Murachi, 2021) In which long waiting time before the scans and dissatisfactions with ultrasound scan that it causes cancers were the reason for their poor practices

The majority of participants had not done any ultrasound scan for the previous pregnancies as opposed to findings of Usman, Olorunkoba, Umar, & Idris, 2019 where majority of participants had done ultrasound scan and the main reason for the use of obstetric scan was to know fetal viability. Other reasons included sex determination, assessment of EDD and for routine scan

despite the availability of ultrasound scan at the facility and at free cost, this big number of participants who had not done any ultrasound scan for the previous pregnancies may be attributed to the weakness in health centres regarding use of ultrasound scan since some had been referred to Gulu regional referral hospital and St Marys hospital Lacor.

5.4 CONCLUSION

Obstetrics ultrasound scan play vital role in antenatal care. this study showed that the knowledge and practices towards obstetrics ultrasound in Awach health Centre IV fairly good although pregnant women considered obstetrics ultrasound scan to be very useful and necessary during the ANC, their practices were poor. the misconceptions regarding harmful effects of ultrasound especially cancer needs to be addressed health educations by health workers, other concerns are long waiting time and availability of staffs (radiographer).

5.5 Recommendations

There is need to integrate information about importance of obstetrics ultrasound scan to remove misconceptions about obstetrics ultrasound scan at facility

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APPENDIX I: CONSENT FORM

Title:

knowledge and practices of pregnant women on sonography at Awach health Centre IV Gulu district.

Investigator:

KOMAKECH ERICK

Purpose:

The general objective of the study will be to assess the knowledge and practices of pregnant mothers on sonography at Awach health Centre IV.

Study procedures: An introductory letter from the chairman Research Committee, Department of radiology Makerere University College of health sciences will be granted for data collection in Awach health Centre IV Gulu district

Permission will be asked from the in charge Awach health Centre IV to collect data from health facility after acceptance

Self-administered questionnaire written in English will be translated into Luo for proper understanding will be administered to 30 participants attending antenatal clinic during the time of interview, selection criteria will be random selection

Confidentiality and privacy will be ensured since names of participants and health Centre name will not be included thereafter questionnaires will be discarded

Risks: There is no any potentially risk in this study since is self-administered questionnaires will be used

Benefits: data collected will help another researcher

The data collected will be used to develop health education messages regarding practice and knowledge of pregnant women which will help health Centre develop policy which will improve antenatal services at facility

Voluntary participation. Participation in this study will entirely voluntary and at the discretion of the participants. Participants are free to join, refuse to join or withdraw from the study at any time if they so wish. No prejudice, malice or any form of harm will be levied on anyone who declined to participate or withdrew from the study.

Compensation: Each study participant was provided with a pair of surgical face masks to protect them from Covid-19.

Persons to contact for any questions about the study;

1. Komakech erick 0782714195

In case a participant has any questions about their right, please contact the Chairperson of the Research and Ethics Committee Makerere university school of health sciences radiology department

DR. MUUBUKE ROY GONZAGA 0772616788

Statement of consent: (Hard copy self-administered questionnaire used).

I..... agree that the procedures, benefits, any potential risks involved and my rights have been clearly explained and I have understood them, and hereby willingly participate in this study.

Name of participant..... **Signature**..... **Date**.....

Researcher

Name..... **Signature**..... **Date**.....

APPENDIX II: SELF-ADMINISTERED QUESTIONNAIRE

PART 1

DEMOGRAPHIC INFORMATION

1.Age

<20years 20-29 years 30-39years 40 and above

2.Marital status

Married single cohabiting separated

3.Religion

Catholic Anglican seventh-day Adventist Jehovah witness

Pentecostal Muslim

4.Level of education attained

Non primary secondary tertiary

PART II

ASSESSING KNOWLEDGE OF PREGNANT WOMEN ON SONOGRAPHY

Source of information regarding obstetrics ultrasound scan

1.Have you ever heard about obstetrics ultrasound scan?

Yes no

2.If yes from

Health worker media friends/ relatives

others specify.....

3. ultrasound scan is important in antenatal care?

agree disagree neutral don't know

4.ultrasound scan can cause harmful effects to you (mother) or (unborn baby)?

Agree disagree neutral don't know

5. In your opinion when should ultrasound scan be done

➤ 3month 4-6month 7-9month not sure don't know

6. Antenatal ultrasound is used for

	agree	disagree	neutral	Don't know
Determine sex of fetus				
Assess fetal well being				
Determine age of pregnancy				
Detect any fetal anomaly				
Estimate date of delivery				
Assess liquor if adequate or not				
Management of delivery				
Know how baby is lying or fetal presentation				

PART III

PRACTICES OF PREGNANT WOMEN ON SONOGRAPHY

1. Who referred you for ultrasound scan

Self-request doctor/midwife request husband friends and relatives

2. Have you already done antenatal ultrasound scan for this current pregnancy

Yes no

3. If yes at how many month

<3month 4-6month 7-9month

4. How many times did you do antenatal ultrasound scan

Once twice more than 3times

5. Reason for current antenatal ultrasound scan

Abdominal pain urinary tract infections fetal presentation/lie
 know sex of unborn baby determine age of pregnancy
 others specify

6. Under what condition are you willing to do antenatal ultrasound scan

Conditions	Yes	No
Complication of pregnancy		
Age of pregnancy		
Determine sex of fetus		
Detect if any fetal anomaly		
Confirm pregnancy		
Other specify		

7. What are the challenges which prevent you from doing antenatal ultrasound scan

Long waiting time

High cost of antenatal scan

Long distance from facility

Not satisfied from antenatal results

Other specify.....

APPENDIX III work plan

ACTIVITY	MONTHS											
	MARCH 2022	APRIL 2022	MAY 2022	JUNE 2022	JULY 2022	AUG 2022	SEP T 20 22	OCT 2022	NOV 2022	DEC 202	JAN 202	FE B 20 22
Formulation an approval of topic												
Proposal writing												
Proposal approval and submission												
Data collection and analysis												
Report writing												
Report approval and submission												

Disseminati on of results									
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APPENDIX IV: BUDGET

ITEM	QUANTITY	PRICE	TOTAL
Photocopying paper	2 reams	20,000 = @	40 000=
Ruled paper	1	12,000=	12,000=
File folders	2 pieces	2000= @	4,000=
Pens	5	700 =@	3500=
Typing, printing proposal	3 copies	10,000= @	30,000=
Binding proposal	3 copies	5000= @	15,000=
printing Questionnaires	30copies	1000=@	30,000=
Printing informed consent	30 copies	300= @	9000=
Printing final copy of report	4 copies	7,000= @	28,000=
Binding report	4 copies	30,000= @	120,000=
Transport and airtime and meals	10 days	25000= @	250,000=
GRAND TOTAL			541500

APPENDIX: IV MAP SHOWING AREA OF STUDY

