KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES

FACULTY OF ALLIED HEALTH SCIENCE

DEPARTMENT OF NURSING

DIPLOMA PROGRAMMES

KNOWLEDGE, ATTITUDE AND PRACTICES OF PREGNANT WOMEN TOWARDS ROUTINE ULTRASONOGRAPHY IN HOLY FAMILY HOSPITAL, BEREKUM

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2022

DECLARATION

We hereby declare that this submission is our own work towards the Diploma in General Nursing and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of diploma of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

The study aimed to explore the knowledge, attitude and practices of pregnant women about routine ultrasonography in Holy Family Hospital, Berekum. A descriptive quantitative cross-sectional study was used to collect in-depth information for the study. The sample population was obtained using a convenient sampling technique. A total of 50 students were sampled for the study. The data for the study was collected by administering the questionnaire to the participants.

The study found that the majority (90%) of respondents had heard of ultrasound scan before. Out of the total respondents who had heard of obstetric ultrasound before (n45, 90%), most (62.2%) had their source of information from midwives/nurses. Most (40%) indicated they knew about obstetric ultrasound scan slightly well, followed by moderately well (28%), those who knew nothing (18%) and 14% who indicated extremely well.

The study recommended that Midwives should embark on counselling about the safety, utility and frequency of ultrasonography during pregnancy to avoid misuse by pregnant women. There is the need to train and retrain sonologists to place them in a better position to deliver effective services. This will go a long way in reducing incidents of false information that sometimes have devastating psycho-social effects on clients.

The study concluded that the use of obstetric sonography has become a veritable tool in prenatal care. The high knowledge exhibited by the study subjects shows the wide acceptability of ultra-sonography in modern day health care delivery system. Most pregnant women go for antenatal ultrasound scans because a doctor or midwife would have requested it.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ABBREVIATION

ANC	Antenatal Clinic
NICU	Neonatal Intensive Care Unit
OPD	Outpatients Department
USG	Ultrasonography
WHO	World Health Organisation

ACKNOWLEDGEMENT

We would like to extend our deepest gratitude and praise to the Almighty God for providing us with strength and knowledge for this study.

Our deepest appreciation also goes to our supervisor Miss Ernestina Mensah, for her constructive criticisms, objective guidance, and direction for the study and the entire staff of the College for their support throughout the study.

We are grateful to all the respondents for their contributions and efforts. Without them, the study would not be possible.

Finally, our sincere appreciation goes to the authors and publishers of pieces of literature used in the study. Thank you all and God bless you.

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

There has been increased medicalization of pregnancy globally due to advances in technology in the field of healthcare and most especially in obstetric care (Zechmeister, 2018). The predominance of this perception is rooted in a number of trends extending over a period of time. In support of these trends, policy makers cite the reduction in maternal and perinatal morbidity and mortality as justification for all the changes made in obstetrical care (Kongnyuy & Van den Brock, 2019). Routine obstetric ultrasound has been one of the most important advances in antenatal care worldwide (Gammeltoft & Nguyen, 2017). Ultrasound was introduced in Obstetrics by Prof. Donald in 1958. Routine obstetric ultrasound is playing an important role in improving the antenatal care and outcome of pregnancy worldwide (Shung, 2018).

Ultrasound in regard to other existing obstetric imaging modalities like magnetic resonance imaging is non-invasive, cheaper and safe. It gives pregnant mothers the real-time images of their unborn babies (Shung, 2018). Obstetric ultrasound is firmly embedded in ANC around the world. Clinical evidence suggests that it improves the effectiveness of the clinical management (Saleh, et al., 2017). Obstetric ultrasonography is important in determining the presence and location of the pregnancy, presence and viability of the embryo, estimating the age of pregnancy and the date of delivery, evaluation of the fetal presentation, placenta localization; amniotic fluid assessment, and assessing fetal anatomy (Buscarini & Lutz, 2018).

While obstetric sonography has proven to be beneficial in situations where it is indicated, the role of it being routine remains contentious (Bashour, et al., 2018). There is a wealth of

literature about the psychosocial effects and therapeutic benefits of prenatal sonography. Bashour et al and Georgsson et al reported that the ultrasound experience will reassure the pregnant woman about fetal well-being, encourage women to abandon practices harmful to the fetus, facilitate early bonding and will be enjoyable and interesting (Bashour, et al., 2018). Indeed, many women have got many expectations from routine scans like knowing the fetal sex, status of the baby and expected date of delivery (Lalor & Devane, 2019). Whynes further reports that, most women now accept the scan uncritically because of the enormous expectations they have, but most especially viewing their babies live on the screen and knowing the fetal sex (Whynes, 2019). The aforementioned views when they reported that pregnant women attending antenatal care in developing countries have got several expectations when they are sent for ultrasound, most which are about knowing the sex of the fetus, viability, expected due date and the reassurance that the baby is fine (Lalor & Devane, 2019).

Advise that sometimes pregnant women have got over expectations that may not be met during scanning which creates a different feeling for them after the scan (Tautz, et al., 2020). This is mostly encountered with women who have some knowledge about obstetric sonography. It has been reported that women with higher levels of formal education are more likely to have many expectations as well as ask many questions compared to women with low levels of formal education (Saleh, et al., 2017). The health care providers have also contributed in a way to this obsession. Gammeltoft and Nguyen report that health workers themselves have declared obstetric ultrasound an indispensable part of modern antenatal care and therefore recommend it. This has created a dramatic overuse of this technology mainly because of its over commercialization for monetary gains in both public and private health facilities. For example, in a survey carried out in Viet Nam, 400 women had an average of

6.6 scans during their pregnancy and one-fifth had had ten scans or more (Gammeltoft & Nguyen, 2017).

Nowadays, antepartum ultrasound has become an essential part of antepartum care (ANC) worldwide (Harris & Marks, 2019). Consistent with the recommendations of the World Health Organization (WHO); an ultrasound scan should be a part of routine prenatal care, specifically, one ultrasound scan before 24 gestational age is suggested for every pregnant woman (World Health Organization, 2018). The International Federation of Gynecology and Obstetrics (FIGO) recommends two (2) ultrasound screens for all pregnant women during the first and second trimesters (Whynes, 2019). Ultrasound during pregnancy is mostly used to estimate fetal age, number of fetuses, placental localization, screening of vertebrate malformation, fetal growth, and fetal presentation, to diagnose obstructed labor, incomplete miscarriage, hydatidiform mole, and ectopic pregnancy (WHO, 2018).

According to some studies in Iran, Iranian women lack enough knowledge about prenatal sonography and have unrealistic expectations and demands about it (Ranji & Dykes, 2020). Also, another study done in Hong Kong "China", out of 249 women who participated in the study, (90.2%) claimed they understood the indication of ultrasound examination. Only (33.7%) of them were correct and had knowledge about the importance of ultrasound exam during pregnancy (Chan, et al., 2020).

Across many countries, women have rated ultrasonography as one of the most crucial part of their antenatal care (Huang, et al., 2018). In view of the overwhelming benefits of ultrasound in women, many women in Africa have not fully taken advantage of this imaging modality partly due to the misconceptions they have or have heard about the procedure elsewhere (Bijma, et al., 2017). In sub-Saharan Africa, the kind of perception women have on antenatal ultrasound varies and greatly depends on the educational status attained (Saleh, et al., 2017).

In some African societies, there are some cultural resistances to ultrasound usage in obstetrics, where it runs up against traditional myths and taboos. Some ethnic groups consider it a bad luck to reveal the content of the uterus in pregnancy and to be able to see the fetus (Carrera, 2019). However, in some parts of sub-Saharan Africa, women have positive views about ultrasound services and considered ultrasound as a tool that could make pregnancy and childbirth safer (Ross, et al., 2018). For instance, in the rural Botswana district hospital, pregnant women showed signs of trusting the ultrasound results more than their own bodily sensations to confirm a live fetus (Tautz, et al., 2020).

In Nigeria, the use of obstetric ultra-sonography is on the rise, however, there are mal-distribution within and between the different parts of the country with its impact less felt among the rural areas largely due to lack of basic infrastructure such as power and skilled health workers. Moreover, the utilization of ultrasound may be hampered by literacy level of women especially in Sokoto state where adult female literacy rate stood at 30% and this might be contributory to the low (40%) ante-natal service utilization (Edzie, et al., 2020).

In Ghana, there are many public and private ultrasound imaging centers, and antenatal care practitioners are equally increasingly referring their clients for ultrasound evaluation of their pregnancies (Mensah, et al., 2021). Many pregnant women undergo antenatal ultrasound imaging examination daily in Holy Family Hospital, Berekum and it will be interesting to explore the knowledge, attitude and practices of pregnant women about routine ultrasonography. Therefore, this study is designed to explore the knowledge, attitude and practices of pregnant women about routine ultrasonography in Holy Family Hospital, Berekum

1.1 Problem Statement

Ultrasound examination forms an integral part of antenatal care both in high risk and normal pregnancies. Even though it acts as a source of reassurance about the well-being of her baby and also a source of connecting with her baby in the antenatal period. Fear regarding its safety and doubts about its necessity are also prevalent among pregnant women (Krishnamoorthy & Kasinathan, 2019).

Although, the access to and utilization of this technology is not universal in developing countries, however, it has potential to reach all parts of the low income areas due to its user friendliness, high sensitivity and specificity, safety and is more relatively cheap to maintain than other forms of technology (Hofmeyr, 2019).

Ugwu et al. have reported that only (46%) women asked for ultrasonography without prescription, while (36%) visited their doctors for ultrasonography and only (2.7%) believed that an infection could occur during pregnancy ultrasound. In this study, it was also reported that, out of 150 responders, the results of prenatal ultrasound were considered reliable by (62.2%). In addition, results showed that women seek prenatal ultrasound by themselves and without referral to a doctor (Ugwu, et al., 2018). This study was consistent with the study by Stephens et al. reporting that many women were willing to perform the ultrasound and pay for it, even when they became accustomed to free health care (Stephens, et al., 2020).

Many factors contribute to the ignorance of the value of obstetric ultrasonography among pregnant women such as society, culture, the way of life, and the level of literacy (Cumber & Nchanji, 2017). Doctors who request ultrasonography, unfortunately, do not give enough information to these patients. Nurses who frequently interact with women are equally ignorant of the value of obstetric ultrasonography; due to the educational courses which do not include varieties in Obstetrics and Gynecological Ultrasound (Krishnamoorthy &

Kasinathan, 2019). Literature on pregnant women's knowledge, attitude and practices towards obstetric ultrasound remains scarce in the major tertiary hospitals in Ghana (Edzie, et al., 2020). The purpose of this study is to explore the knowledge, attitude and practices of pregnant women about routine ultrasonography in Holy Family Hospital, Berekum.

1.2 General objective

To explore the knowledge, attitude and practices of pregnant women about routine ultrasonography in Holy Family Hospital, Berekum

1.3 Specific objective

1. To determine the knowledge of pregnant women about routine ultrasonography
2. To investigate the attitude of pregnant women about routine ultrasonography
3. To examine the practices of pregnant women about routine ultrasonography

1.4 Operational definition

Obstetric ultrasound: It is also known as prenatal ultrasound, is the use of medical ultrasonography in pregnancy, in which sound wave is used to create a real-time visual image of the developing embryo or fetus in the uterus (womb).

Knowledge: defined as all the facts that someone knows about a particular subject.

Attitude: defined as someone's opinions or feelings about something, especially as shown by their behaviour.

Practice: refers to the act of doing something again and again in order to learn or improve.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter contains review of relevant literature related to the research topic. The sources of information include books, journals, online articles and research reports. It is organized based on the specific objectives of the study.

2.1 Knowledge of Pregnant Women About Routine Ultrasonography

A descriptive study was undertaken in the Radiology Department of Bangalore Medical College and Research Institute. The study found that the knowledge of pregnant women about the use of ultrasound in assessing the gestational age (87.5%), estimate date of delivery (93.75%) and to see abnormalities of the baby (81.9%) was sound. Less than half of the patients knew that ultrasound can give information about presentation (40%), liquor status (44.4%) and abnormalities of uterus (36.9%). The awareness was least for assessing placental position (30.6%). Almost all (98.4%) of the patients first heard of antenatal ultrasound from doctors followed by TV/Media (1.6%) (Dasan, et al., 2018).

A descriptive cross-sectional study was conducted among 300 pregnant women who reported for obstetric sonography at Mulago hospital in Kampala, Uganda. Participants who had ever heard about ultrasound scan were 265 (88.3%) and obtained information from various sources such as health care workers (80.49%), mass media (65.2%), family and friends (52.8%) and others (23.25%). Most participants reported that obstetric ultrasound scan should be done between 4 and 6 months of pregnancy. Most participants had a good knowledge regarding the use of ultrasound in ANC. Majority (83.7%) of the respondents agreed that an ultrasound scan is important in antenatal care. Majority (66.7%) also reported a misconception that ultrasound has harmful effects. Participants agreed that ultrasound can be

sued to determine the age of pregnancy (86.7%), estimate the expected date of delivery (86.7%), predict the sex of baby (53.7%), assess baby's wellbeing (53.7%), assess abnormalities of the baby (33.3%) and management of delivery (67.0%) (Maniragena, et al., 2021). Main sources of information to the pregnant women regarding obstetric ultrasound revealed by various studies included health workers, family, friends and mass media (Buscarini & Lutz, 2018).

An exploratory-descriptive study using interviewer-administered questionnaires was conducted in Uganda. The study found that all women reported having some knowledge about obstetric sonography no matter the level of education, parity or type of occupation. However, knowledge levels varied depending on the level of education. For example, the two nurses in this study cited the uses of obstetric sonography which included determining fetal presentation and lie, expected date of delivery, location of placenta, checking whether the cord was around the neck and assessing the fetal parts. On the contrary, the 8 women without formal education knew the existence of obstetric scan for showing that the baby is alive. The source of knowledge again varied according to level of education. The nurses, primary and secondary school teachers cited sources like radio and T.V programmes, newspapers, health promotion activities and peers, while the market vendors cited talks given by mid-wives when they go antenatal check-ups and their peers only. However, all the 30 women in this study expressed that they know ultrasound may lead to cancer, regardless of their level of education. When asked about the source of this knowledge, it was a common thread that they had got it from their friends (Gonzaga et al., 2019).

A descriptive cross-sectional study carried out in India found that participants agreed that ultrasound is used to detect defects in the baby (70%), find the fetal position (74%), find expected date of delivery (86%), determine sex of the baby (36%), assess growth of the baby (88%), confirm pregnancy (86%), confirm wellbeing of the baby (89%) and confirm presence

of multiple pregnancies (79%). Source of information regarding USG were Doctors (88%), Nurse (4%), friends/relatives (6%) and Media (2%). The study concluded that awareness regarding the indications for USG during pregnancy was found to be fairly good among the participant but 36% of the participants assumed determination of sex in utero as an indication for USG during pregnancy which shows their ignorance (Krishnamoorthy & Kasinathan, 2019).

An institutional-based cross-sectional study was conducted on pregnant women attending antenatal care (ANC) in Jimma town public health care facilities. The study found that (62.7%) of the respondents know about obstetric ultrasound. The sources of information for prenatal ultrasound were, Health Professional (76.2%), health extension worker (9.4%), Radio/TV (6.2%), Relatives (4.1%) & Others (4.1%). Regarding the knowledge about the recommended gestational age for a routine prenatal ultrasound scan, (46.6%) reported during the first three months of pregnancy. Source of information on obstetric ultrasound were health institution (48.5%), Radio/TV (4.0%) and Relatives (2.6%) (Yetwale, et al., 2022).

A cross-sectional study was conducted among 367 women that attend the OB/GYN outpatient clinic in Jeddah. The data was collected through interviewing questionnaire. The questionnaire consisted of 5 items to assess their knowledge, attitude, practice, and sociodemographic characteristics. The study found that majority (93.0%) had good knowledge, and only 26 (7.0%) had poor knowledge. Majority of participants agreed that helps in determining the fetal, cord and placenta position (92.4%), assists with finding the expected date of delivery (83.7%), fetal Heart rate detected by obstetric ultrasonography (96.7%) and useful with knowing the sex of the fetus (97.6%). Participants also agreed that obstetric ultrasonography doesn't help in determining the autism (63.7%), doesn't help in determining the cerebral palsy (37.1%), doesn't help in determining the learning difficulties

(66.1%). The primary resources of information were Obstetrician (71.3%), followed by Internet by (46.1%) (Abduljabbar, et al., 2020).

A descriptive cross-sectional design carried out in Nigeria. The study found that majority, (96.4%) had good knowledge score for use and indications for ultrasonography in pregnancy. Among the responses given 31.3% felt too many ultrasonography are harmful to the baby while 13.8% also felt it could lead to cancer. Their sources of information were health talk in hospital (72.3%), Media (6.7%), friends/relatives (13.8%) and 7.2% read about it. Although, majority of the respondents had good knowledge of ultrasound some of them still harbored fears about the safety of the procedure to the fetus and mother. There is the 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 (Oche, et al., 2019).

A cross-sectional prospective study conducted in the Cape Coast Metropolis of Ghana found that the majority of the respondents (87.8%) indicated that they knew what ultrasound is used for. Almost all the women (98.4%) indicated that ultrasound has positive effects on pregnancy outcome (generally safe, check fetal wellbeing, position and presentation, etc.) with just few (1.6%) stating ultrasound has negative effects on pregnancy outcome (time wasting, the wrong diagnosis of fetal sex and abnormality, the wrong estimation of date of delivery, etc.). Out of the total number of respondents, (64.1%) agreed that ultrasound can diagnose abnormal head development and the rest did not. (52.3%) also indicated that it could help diagnose cardiac developmental abnormalities whereas (39.3%) stated that it can diagnose cleft palate. The responses further showed that (43.0%), (31.5%), and (17.4%) of the respondents specified that ultrasound could help diagnose limb abnormalities, fetal organ abnormalities, and Down's syndrome, respectively (Mensah, et al., 2021).

2.2 Attitude of Pregnant Women About Routine Ultrasonography

A descriptive cross-sectional study carried out in India found that participants attitude towards ultrasound during pregnancy was good as majority of the participants agreed that ultrasound is safe during pregnancy (88%), ultrasound in an essential investigation during pregnancy (98%), they felt comfortable during ultrasound examination (82%) and they were given details of their baby by the doctor who performed the scan (81%) (Krishnamoorthy & Kasinathan, 2019).

An exploratory-descriptive was conducted in Uganda. The study found that all the women reported a positive attitude towards obstetric sonography with 66.7% of them saying that the scan could help them plan better for their pregnancies. 83.3% had a positive feeling about scanning and accepted it uncritically when their doctor requested for it. However, all the women expressed their feelings about the safety of their lives and the lives of their babies due to overexposure to ultrasound. The fear of getting cancer due to exposure to the scan was a common perception in all the responses. Additionally, all women expressed their dissatisfaction with the person doing the scan due to lack of proper communication with them. Many of them had questions, but were not either responded to or they were responded to rudely as one lady put it (Gonzaga, et al., 2019).

A study in Uganda found that participants had a positive attitude towards obstetric ultrasound scan. Participants' satisfaction for the results of the ultrasound scan and health workers' care (90%), affordable costs (79%) could have been leading factors contributing to the positive attitude. Positive attitude also explains why some participants did the scan on self-request (95%). The negative attitude that was reported by few participants were possibly related to what was wrongly perceived as harmful effects of ultrasound such as causing cancer (9%), discomfort (16%), and hurting the baby (26%) (Maniragena, et al., 2021).

An institutional-based cross-sectional study was conducted on pregnant women attending antenatal care (ANC) in Jimma town public health care facilities. The majority (77%) of study participants had a good attitude towards prenatal ultrasound scanning (Yetwale, et al., 2022).

A cross-sectional study was conducted among 367 women that attend the OB/GYN outpatient clinic in Jeddah. The study found that third-fourths of the women 291 (78.9%) believed that obstetric sonography is safe, and 309 (83.8%) believed that obstetric sonography doesn't lead to a congenital anomaly (Abduljabbar, et al., 2020).

2.3 Practices of Pregnant Women About Routine Ultrasonography

A descriptive study was undertaken between the period of January and March, 2016 in the Radiology Department of Bowring and Lady Curzon Hospital, Bangalore Medical College and Research Institute. The study found that almost all (93.2%) of the pregnant women had antenatal ultrasound done in the previous pregnancy (Dasan, et al., 2018).

An exploratory-descriptive was conducted in Uganda. The study found that all women reported that they duly accepted to go for the scan in their pregnancy. Some even reported requesting for it themselves. The commonest reasons cited for them to willingly go the scan were to know the fetal sex (100%), expected date of delivery (100%) and viability (81.2%) (Gonzaga, et al., 2019).

A descriptive cross-sectional study was conducted among 300 pregnant women who reported for obstetric sonography at Mulago hospital in Kampala, Uganda. The participants' practices towards obstetric ultrasound scan were generally very poor. Most participants, (88.7%) had previous experience of pregnancy. Among these, (33.1%) had done ultrasound scan for the previous pregnancies while (66.9%) participants had not done ultrasound scan for the previous pregnancies. Most (75.3%) participants had done only one ultrasound scan for the

current pregnancy and over 50% had no ultrasound scan done whereas very few had done it three times and more (25%), yet the majority (69.3%) were in the third trimester of pregnancy (Maniragena, et al., 2021).

An institutional-based cross-sectional study was conducted in Ethiopia. The study found that (60.7%) of respondents used prenatal ultrasound during their pregnancy, out of which (59.2%) were requested by clinicians. Time of first obstetric ultrasound utilization of (23.9%) of the respondents were during their third trimester (after 24weeks) (Yetwale, et al., 2022).

A cross-sectional prospective study conducted in the Cape Coast Metropolis of Ghana found that the majority of the respondents (34.6%) indicated that they wanted antenatal ultrasound imaging done three times in a pregnancy. Few (24.2%), (18.2%), and (12.5%) of the respondents wanted ultrasound scan performed for them two times, more than three times, and once, respectively. The commonest reason for women to undergo ultrasound imaging was because a doctor or midwife requested it in (87.5%) of the respondents. (47.9%) had the scan done because they thought it was relevant to the management of their pregnancy, but (52.1%) did not think so (Mensah, et al., 2021).

CHAPTER THREE

MATERIALS AND METHODS

3.0 Introduction

This chapter discusses the methods used for the study. It focuses on the study design, profile of the study area, study population, sampling and sample size, data collection and method of analysis, ethical consideration and limitation of the study.

3.1 Study area

The Holy Family Hospital Berekum is situated in the Bono Region of Ghana. Due to the strategic location of the hospital patients from other parts of Ghana and neighboring country like La 'Cote D'evoire visits the hospital. The hospital has a bed capacity of about 250 beds and provides the following services; General Surgery, Child Health, Obstetrics/Gynecology, Ultrasonography, Ophthalmology, Physiotherapy, Laboratory Investigations and Blood Transfusion. The rest are X-Ray Investigations, HIV/AIDS (VCT, ART, and PMTCT), Special Diabetic Clinic, Special Hypertensive Clinic, Special TB Clinic, Special eye clinic, Pharmacy and Morgue Services. The hospital has the following existing departments (Wards): Medical Ward (male and female), Maternity Ward, Surgical Ward (male & female), Children's Ward, neonatal intensive care unit (NICU), Labour ward, Outpatients Department (OPD), Antenatal Clinic and Operating Theatres for general surgeries.

3.2 The study population

All pregnant women who will present for obstetric ultrasound scan within the study period will meet the inclusion criteria for this study. However, pregnant women with emergences and those who later declined their participation and withdrew from the study will be excluded.

3.3 Study design

This will be a descriptive quantitative cross-sectional study whereby data will be collected at a single point in time.

3.4 Sampling technique and Size

Convenient sampling technique will be used to recruit 50 participants for the questionnaire survey. This technique will allow investigators to recruit participants who will be at their exposure. It will be a technique of choice because it is easy, expedient and less time consuming.

3.5 Data collection methods and instruments

The data will be collected using semi-structured questionnaire which exhibited clarity. The questionnaire will be written in English but investigators will translate into the local languages, mainly Twi for participants who will not be able to understand English. The participants will be recruited into the study at their convenience at the completion of the ultrasound scan examination. Each participant will be approached at different time to avoid sharing of ideas and biased information. Each questionnaire will be thoroughly checked for completion.

3.6 Data analysis techniques

The data will be analyzed with aid of Microsoft excel to generate percentages and frequencies. Statistical tables and graphs will be used to present data into meaningful information.

3.7 Ethical consideration

An introductory letter will be obtained from the administration of Holy Family NMTC, Berekum. Ethical approval will then be sought from Holy Family Hospital, Berekum. Confidentiality, autonomy, respects and dignity of all the participants will be strictly

observed throughout the study. Additionally, participants will be assured of their rights to decline participating in the study and also not to answer questions they will feel uncomfortable with. The participants will also be assured that there will be no harm, prejudice, malice or any form of danger should they wish not to participate in the study.

3.8 Limitation of the study

Exclusion of the husbands and relatives who may influence the perceptions of the pregnant women will be the major limitation of this study.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter deals with analysis of data collected from the field of study and the results obtained from the analysis. It provides a descriptive summary of the demographic data of students, causes of stress and impact of stress on academic performance.

4.1 Demographic Data of Respondents

Table 4. 1: Age of Respondents

Variable	Frequency	Percentage
10-17	1	2
18-25	31	62
26-35	15	30
36-45	2	4
>45	1	2

From table 4.1, most (62%) of the respondents were aged 18 to 25 followed by 26-35 years (30%), 36-45 years (4%), 10-17 years and more than 45 years (2%).

Table 4. 2: Respondents Marital Status

Variable	Frequency	Percentage
Married	27	54
Single	20	40
Divorced	2	4
Widowed	1	2

As shown in table 4.2, over half (54%) of the respondents were married followed by single (40%), divorced (4%) and widowed (2%).

Table 4. 3: Pregnancy Trimester of Respondents

Variable	Frequency	Percentage
1st	12	24
2nd	22	44
3rd	10	20
Unknown	6	12

Table 4.3, depicts that nearly half (44%) of the respondents were in the 2nd trimester of pregnancy followed by 1st trimester (24%), 3rd trimester (20%) and unknown (12%).

Table 4. 4: Parity of Respondents

Variable	Frequency	Percentage
Multiparous	26	52
Nulliparous	24	48

Table 4.4 shows that over half (52%) of the respondents were multiparous women whiles 42% of those remaining were nulliparous.

Table 4. 5: Occupation of Respondents

Variable	Frequency	Percentage
Government employee	24	48
Trader	15	30
None	6	12
Housekeeper	5	10

As shown in table 4.5, nearly of half (48%) of the respondents were government employees followed by traders (30%), unemployed (12%) and housewives (10%).

Table 4. 6: Educational Status of Respondents

Variable	Frequency	Percentage
None	1	2
Primary/JHS	8	16
Secondary	10	20
Tertiary	31	62

Table 4.6 depicts that most (62%) of the respondents had completed Tertiary followed by Senior High (20%), Primary/JHS (16%) and those who had no formal education (2%).

Table 4. 7: Religion of Respondents

Variable	Frequency	Percentage
Islam	8	16
Christianity	42	84
African tradition	0	0

As shown in table 4.7, majority (84%) of the respondents were Christians and the remaining 16% were Muslims.

4.2 Knowledge of Pregnant Women About Routine Ultrasonography

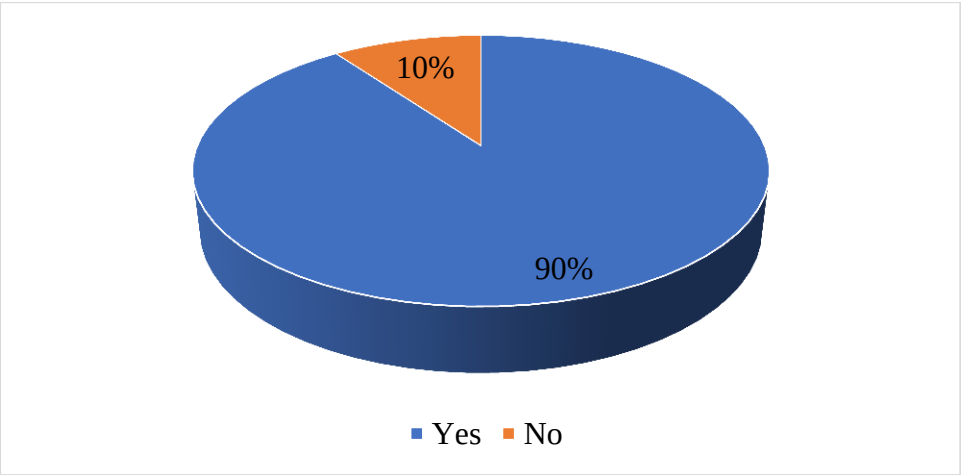

Figure 4. 1: Respondents on hearing about ultrasound before

Figure 4.1 depicts that majority (90%) of respondents had heard of ultrasound scan before.

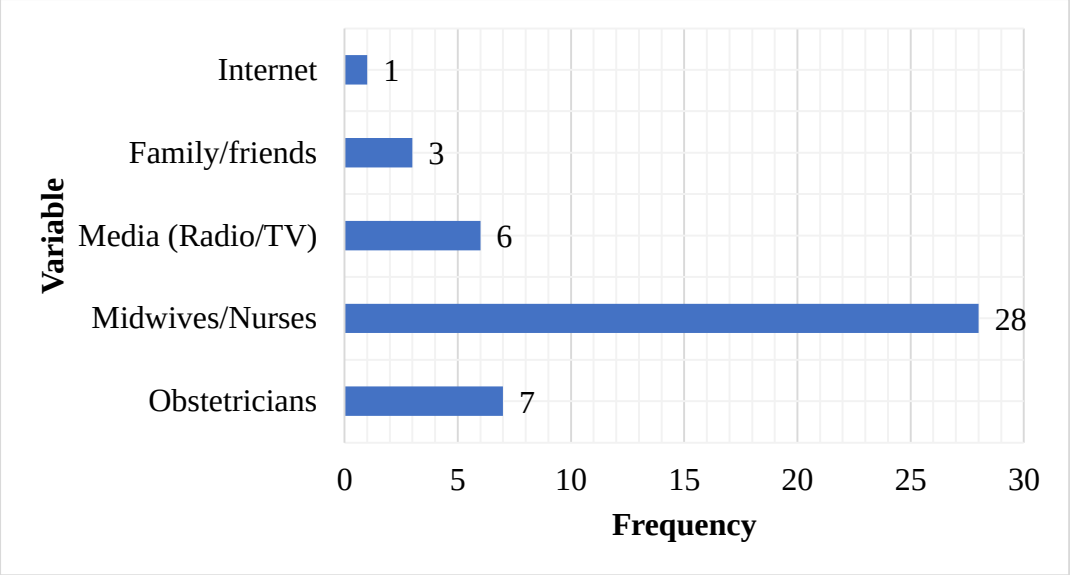

Figure 4. 2: Respondents source of information

Out of the total respondents who had heard of obstetric ultrasound before (n45, 90%), most (62.2%) had their source of information from midwives/nurses followed by obstetricians (15.6%), media (TV/Radio) (13.3%), family/friends (6.7%) and internet (2.2%).

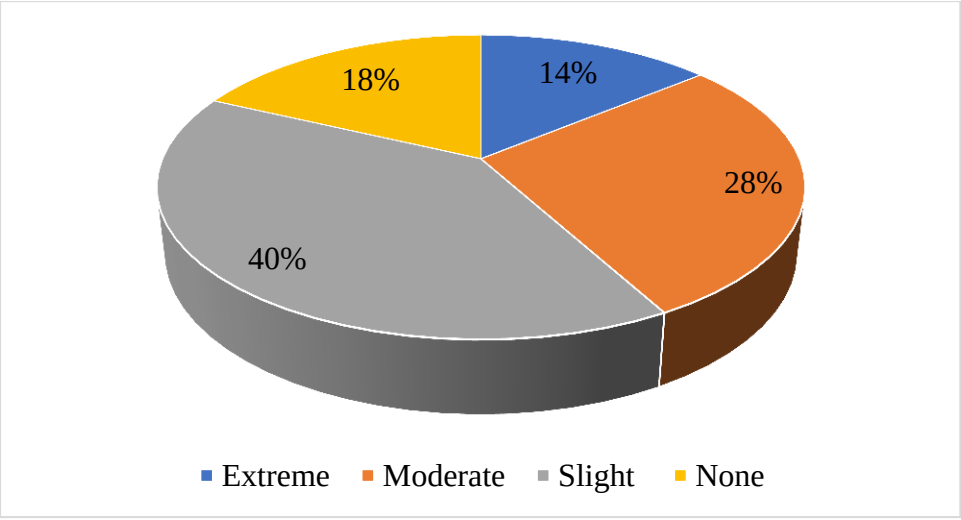

Figure 4. 3: Respondents on how well they know about the use of ultrasound

Figure 4.3 shows how well respondents know about obstetric ultrasound scan, most (40%) indicated they knew about obstetric ultrasound scan slightly well, followed by moderately well (28%), those who knew nothing (18%) and 14% who indicated extremely well.

Table 4. 8: Respondents on the use of ultrasound

Variable	Frequency	Percentage
Assess gestational age	40	80
Estimate expected date of delivery	36	72
Check fetal abnormalities	42	84
Gives information about the presentation of fetus	25	50
Check abnormalities of the uterus	39	78
Assess placental position	39	78
Predict sex of baby	41	82
Assess growth of the baby	36	72
Check fetal wellbeing	37	74

Table 4.8 shows that majority of the respondents reported that ultrasound is used to check fetal abnormalities (84%), predict sex of baby (82%) and assess gestational age (80%). Most of the respondents mentioned it can be used to check abnormalities of the uterus (78%), assess placental position (78%), check fetal wellbeing (74%), assess growth of baby (72%), estimate expected date of delivery (72%). Exactly half (50%) of the respondents cited that ultrasound gives information about the presentation of fetus.

4.3 Attitude of Pregnant Women About Routine Ultrasonography

Table 4. 9: Respondents attitude about routine ultrasonography

Statement		Agree	Disagree	Don't know
Ultrasound is safe during pregnancy	n	43	6	1
	%	86	12	2
Ultrasound in an essential investigation during pregnancy	n	44	4	2
	%	88	8	4
I feel comfortable during ultrasound examination	n	34	15	1
	%	68	30	2
Exposure to the scan can cause cancer	n	23	20	8
	%	46	40	16
There is always a lack of communication from the one doing the scan	n	29	21	1
	%	58	42	2
The cost for ultrasound is affordable	n	15	33	2
	%	30	66	4
Obstetric sonography can hurt the baby	n	26	21	3
	%	52	42	6
Will you go for a scan without a doctor's request?	n	25	25	0
	%	50	50	0
Obstetric sonography can lead to a congenital anomaly	n	22	22	6
	%	44	44	12

As shown in table 4.9, majority of the respondents agreed to the following statements ultrasound is safe during pregnancy (86%) and ultrasound in an essential investigation during pregnancy (88%). Most of the respondents agreed that they felt comfortable during ultrasound examination (68%). Over half of the respondents agreed there is always a lack of communication from the one doing the scan (58%) and obstetric sonography can hurt the baby (52%). Most (66%) of the respondents disagreed that the cost for ultrasound is affordable. Half (50%) of them agreed that they will go for a scan without a doctor's request. Less than half indicated that obstetric sonography can lead to a congenital anomaly (44%) and exposure to the scan can cause cancer (46%).

4.4 Practices of Pregnant Women About Routine Ultrasonography

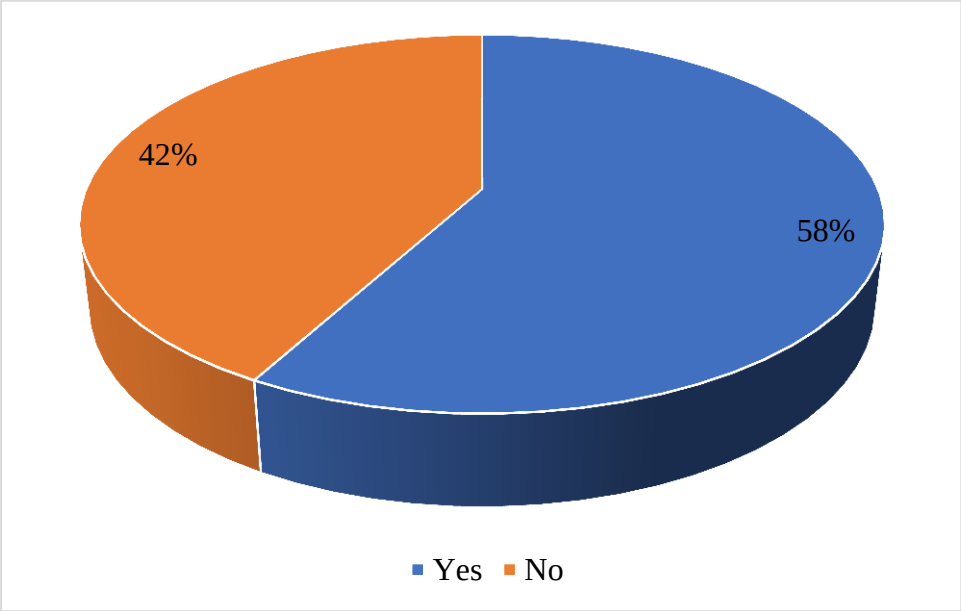

Figure 4. 4: Antenatal scan in previous pregnancy

Over half (58%) of the respondents indicated they had antenatal scan in their previous pregnancy.

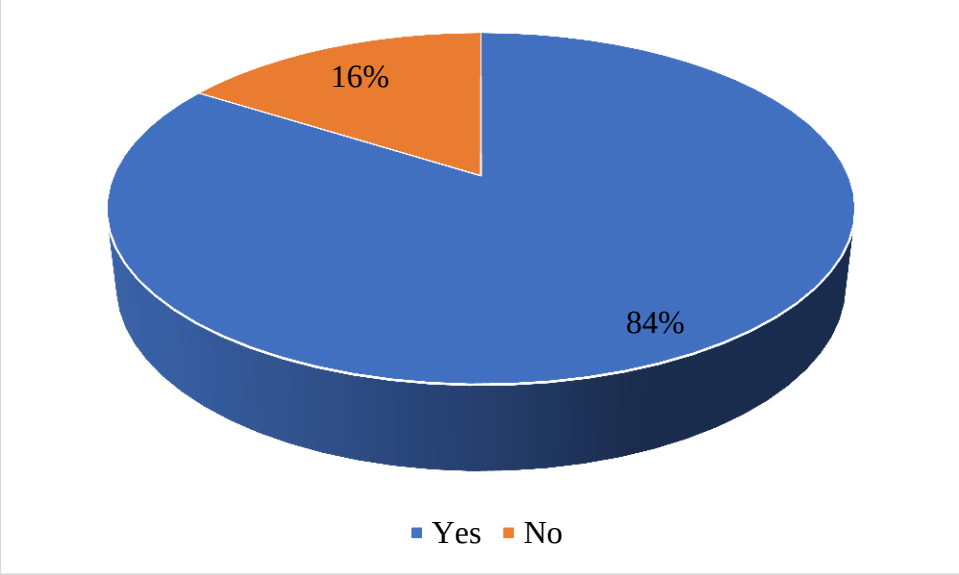

Figure 4. 5: Antenatal scan in current pregnancy

Majority (84%) of the respondents indicated antenatal scan have been performed on them in their current pregnancy.

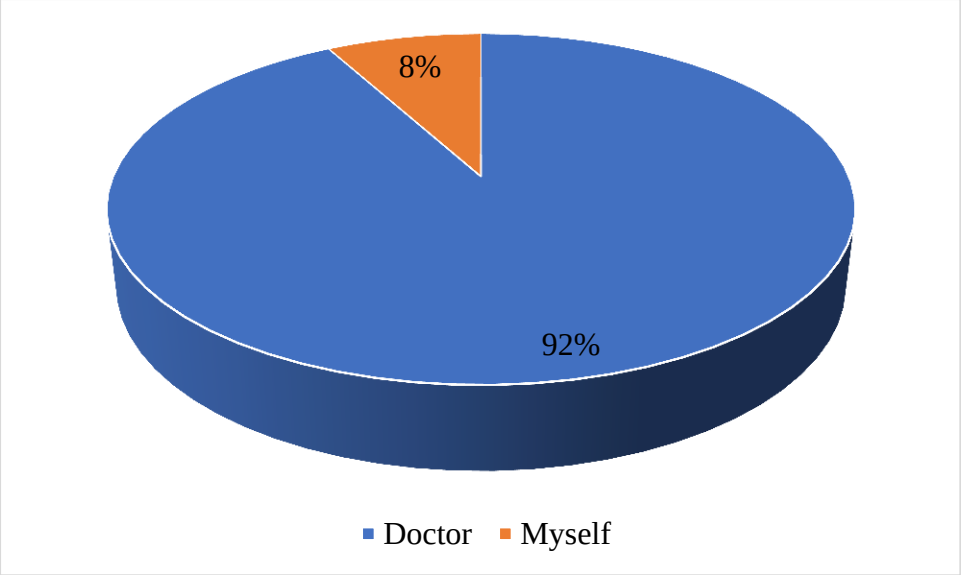

Figure 4. 6: Respondents on who requested the scan

A very high percentage (92%) of the respondents indicated that their scan was requested by a doctor.

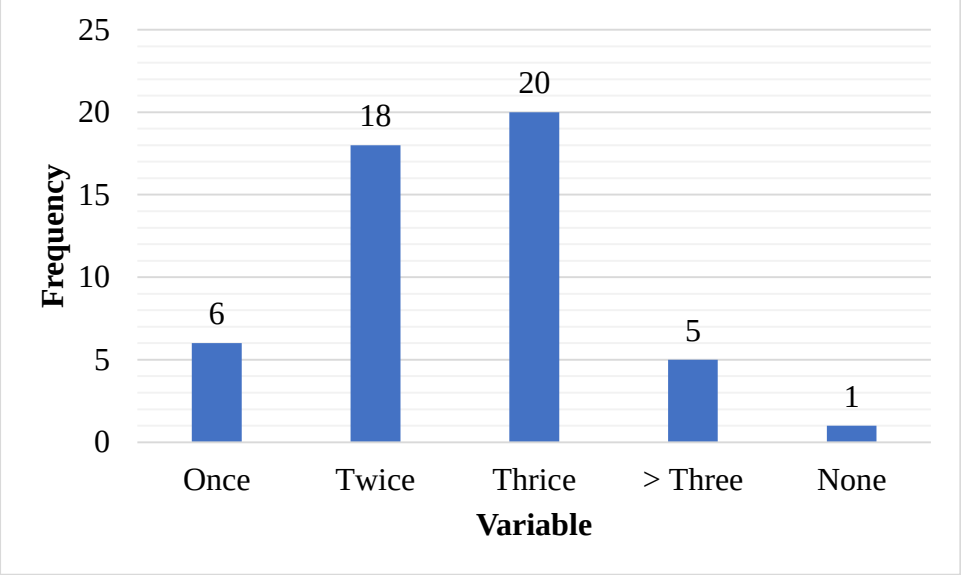

Figure 4. 7: Number of times ultrasound scan can be performed during pregnancy

Most (40%) of the respondents indicated ultrasound scan should be performed three times during pregnancy followed by two times (36%), one time (12%), more than three (10%) and none (2%).

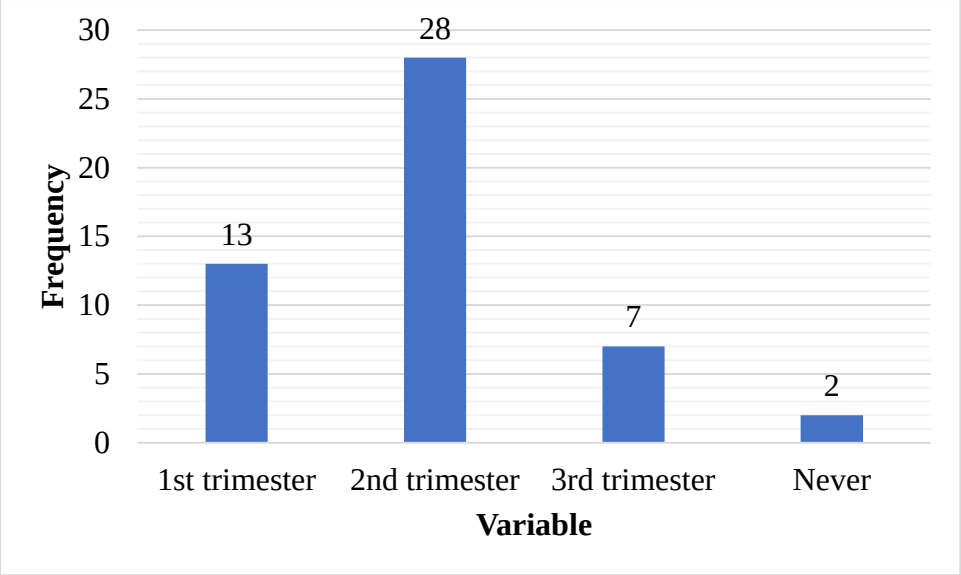

Figure 4. 8: When respondents wants to have ultrasound scan done

Over half (56%) of the respondents said they want the ultrasound performed in the 2nd trimester of pregnancy followed by 1st trimester (26%), 3rd trimester (14%) and those who did not want it performed in any of the trimesters (2%).

Table 4. 10: Factors that hinder the use of obstetric ultrasound

Variable	Frequency	Percentage
Long waiting time	37	74
No privacy	18	36
High cost	32	64
Rough handling by health workers	15	30
Being attended to by students	12	21

Table 4.10 shows that majority (74%) of respondents saw long waiting time as a hindrance to the use of obstetric ultrasound followed by high cost (64%), lack of privacy (36%), rough handling by health workers (30%) and being attended to by students (21%).

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS

5.0 Introduction

In this chapter, the data analysed in chapter four were interpreted based on scientific evidence. The findings are briefly discussed with references to support the study.

5.1 Discussions

5.1.1 Knowledge of Pregnant Women About Routine Ultrasonography

The current study found that majority (90%) of respondents had heard of ultrasound scan before and most (62.2%) had their source of information from midwives/nurses followed by obstetricians (15.6%) and media (TV/Radio). Equally, Dasam et al. (2018) found that almost all (98.4%) of the patients first heard of antenatal ultrasound from doctors followed by TV/Media. In addition, Buscarini and Lutz (2018) reported that participants who had ever heard about ultrasound scan were 265 (88.3%) and obtained information from various sources such as health care workers (80.49%), mass media (65.2%), family and friends (52.8%) and others (23.25%).

In the current study, majority of the respondents reported that ultrasound is used to check fetal abnormalities (84%), predict sex of baby (82%) and assess gestational age (80%). Similarly, Dasam et al. (2018) found that the knowledge of pregnant women about the use of ultrasound in assessing the gestational age (87.5%), estimate date of delivery (93.75%) and to see abnormalities of the baby (81.9%) was sound. Furthermore, Maniragena et al. (2021) found that ultrasound can be sued to determine the age of pregnancy (86.7%), estimate the expected date of delivery (86.7%), predict the sex of baby (53.7%), assess baby's wellbeing (53.7%), assess abnormalities of the baby (33.3%) and management of delivery (67.0%).

Additionally, the current study found that half (50%) of the respondents cited that ultrasound gives information about the presentation of fetus. This is contrary to the findings of the study conducted by Dasam et al. (2018) as they found that less than half of the patients knew that ultrasound can give information about presentation (40%).

The present study found that most of the respondents mentioned it can be used to check abnormalities of the uterus (78%), assess placental position (78%), check fetal wellbeing (74%), assess growth of baby (72%), estimate expected date of delivery (72%). Correspondingly, Mensah et al. (2021) found that almost all the women (98.4%) indicated that ultrasound has positive effects on pregnancy outcome (generally safe, check fetal wellbeing, position and presentation, etc.).

5.1.2 Attitude of Pregnant Women About Routine Ultrasonography

In the present study majority of the respondents agreed to the following statements ultrasound is safe during pregnancy (86%) and ultrasound in an essential investigation during pregnancy (88%). Most of the respondents agreed that they felt comfortable during ultrasound examination (68%). Similarly, Krishnamoorthy and Kasinathan (2019) reported attitude towards ultrasound during pregnancy was good as majority of the participants agreed that ultrasound is safe during pregnancy (88%), ultrasound in an essential investigation during pregnancy (98%), they felt comfortable during ultrasound examination (82%) and they were given details of their baby by the doctor who performed the scan.

The current study found that over half of the respondents agreed there is always a lack of communication from the one doing the scan (58%) and obstetric sonography can hurt the baby (52%). In the same way, Gonzaga et al. (2019) found that all the women expressed their feelings about the safety of their lives and the lives of their babies due to overexposure to ultrasound. The fear of getting cancer due to exposure to the scan was a common perception

in all the responses. Additionally, all women expressed their dissatisfaction with the person doing the scan due to lack of proper communication with them.

The present study found that most (66%) of the respondents disagreed that the cost for ultrasound is affordable. Contrary, Maniragena, et al. (2021) reported participants' satisfaction for the results of the ultrasound scan and health workers' care (90%), affordable costs (79%) could have been leading factors contributing to the positive attitude.

The current study reported that less than half indicated that obstetric sonography can lead to a congenital anomaly (44%) and exposure to the scan can cause cancer (46%). Contrary, Abduljabbar, et al. (2020) found that third-fourths of the women 291 (78.9%) believed that obstetric sonography is safe, and 309 (83.8%) believed that obstetric sonography doesn't lead to a congenital anomaly.

5.1.3 Practices of Pregnant Women About Routine Ultrasonography

The present study found that over half (58%) of the respondents indicated they had antenatal scan in their previous pregnancy. This is partly in line with the report given by Dasan et al. (2018) as almost all (93.2%) of the pregnant women had antenatal ultrasound done in the previous pregnancy. This could be due to the fact that almost half (48%) of the respondents in the current study were nulliparous.

A very high percentage (92%) of the respondents indicated that their scan was requested by a doctor. Equally, Yetwale, et al. (2022) found that (60.7%) of respondents used prenatal ultrasound during their pregnancy, out of which (59.2%) were requested by clinicians.

In the present study most (40%) of the respondents indicated ultrasound scan should be performed three times during pregnancy followed by two times (36%), one time (12%), more than three (10%) and none (2%). Similarly, Mensah, et al. (2021) found that majority of the respondents (34.6%) indicated that they wanted antenatal ultrasound imaging done three

times in a pregnancy. Few (24.2%), (18.2%), and (12.5%) of the respondents wanted ultrasound scan performed for them two times, more than three times, and once, respectively.

In the current study Over half (56%) of the respondents said they want the ultrasound performed in the 2nd trimester of pregnancy followed by 1st trimester (26%), 3rd trimester (14%) and those who did not want it performed in any of the trimesters (2%). Contrary, Yetwale, et al. (2022) found that time of first obstetric ultrasound utilization of (23.9%) of the respondents were during their third trimester (after 24weeks).

5.2 Conclusions

The use of obstetric sonography has become a veritable tool in prenatal care. The high knowledge exhibited by the study subjects shows the wide acceptability of ultra-sonography in modern day health care delivery system. Most pregnant women go for antenatal ultrasound scans because a doctor or midwife would have requested it. The most common perceived advantages of ultrasound were to check fetal abnormalities, predict sex of baby and assess gestational age and most importantly placental location. There is inadequate information flow from doctors, midwives and sonographers to clients concerning the indications for the ultrasound, the processes involved and the results of the procedure.

5.3 Recommendations

Based on the findings of the study, the following recommendations have been made.

1. Midwives should embark on counselling about the safety, utility and frequency of ultrasonography during pregnancy to avoid misuse by pregnant women.
2. There is the need to train and retrain sonologists to place them in a better position to deliver effective services. This will go a long way in reducing incidents of false information that sometimes have devastating psycho-social effects on clients.

3. Doctors and midwives should educate their patients on reasons why they ask them to go for ultrasound scans and should make every effort to explain the ultrasound findings to them.
4. Sonographers should take time to educate and communicate with their patients before, during and after the scan.

REFERENCES

Abduljabbar, H. S., Jabal, N., Hussain, F. A., Alqabbaa, R. M., Marwani, F. A., Alghamdi, S. A., . . . Alsulami, H. S. (2020). Knowledge, attitudes and practice about obstetric ultrasonography among women attending a University Hospital: A Cross-Sectional Study. *Open Journal of Obstetrics and Gynecology, 10*, 1763-1775.

Bashour, H., Hafez, R., & Abdulsalam, A. (2018). Syrian women´s perceptions and experiences of ultrasound screening in pregnancy: implications for antenatal policy. *Reproductive Health Matters, 13*(25), 147-154.

Bijma, H. H., Van der Heide, A., & Widschut, H. J. (2017). Decision-making after ultrasound diagnosis of fetal abnormality. *European Clinics in Obstetrics and Gynaecology, 3*(2), 89-95.

Buscarini, E., & Lutz, H. (2018). *World Health Organization. Manual of diagnostic ultrasound (2 ed.).* Geneva: World Health Organization.

Carrera, J. M. (2019). Obstetric ultrasounds in Africa: is it necessary to promote their appropriate use. *Donald School Journal of Ultrasound in Obstetrics and Gynecology, 5*(3), 289-296.

Chan, L. W., Chang, O. K., Chau, M. C., Sahota, D. S., Leung, T. Y., Fung, T. Y., & Lau, T. K. (2020). Expectations and knowledge of pregnant women undergoing first and second trimester ultrasound examination in a Chinese population. *PubMed, 28*(8), 739-744.

Cumber, S. N., & Nchanji, K. N. (2017). Diagnostic Medical Ultrasound Awareness among Women in Cameroon. *International Journal of Radiology & Radiation Therapy, 4*, 397-398. Retrieved from https://doi.org/10.15406/ijrrt.2017.04.00102

Dasan, T. A., Singh, S., Koratagere, R. S., Raja, B., & Rangaswamy, N. B. (2018). Knowledge and attitude of antenatal women towards routine ultrasound screening in pregnancy at a tertiary institution in Bengaluru. *International Journal of Anatomy, Radiology and Surgery, 5*(4), 11-14.

Edzie, E. K., Defi-Tettey, K., Gorleku, P. N., Ampofo, J. W., Piersson, A. D., Asemah, A. R., . . . Edzie, R. A. (2020). Perception of Ghanaian primigravidas undergoing their first antenatal ultrasonography in Cape Coast. *Radiology Research and Practice*, 1-10. Retrieved from https://doi.org/10.1155/2020/4589120

Gammeltoft, T., & Nguyen, H. T. (2017). The commodification of obstetric ultrasound scanning in Hanoi, Viet Nam. *Reproductive Health Matters, 15*(29), 163-167.

Gonzaga, M. A., Kigull-Malwadde, E., Francis, B., & Rosemary, B. (2019). Current knowledge, attitudes and practices of expectant women toward routine sonography in pregnancy at Naguru health centre, Uganda. *Pan African Medical Journal*, 1-8.

Harris, R. D., & Marks, W. M. (2019). Compact ultrasound for improving maternal and perinatal care in low-resource settings: review of the potential benefits, implementation challenges, and public health issues. *J Ultrasound Med, 8*(8), 1067-1076.

Hofmeyr, G. J. (2019). Routine ultrasound examination in early pregnancy: is it worthwhile in low-income countries? *Ultrasound Obstet Gynecol, 34*, 367-370.

Huang, K., Tao, F., Raven, L., Liu, L., Wu, X., & Tang, S. (2018). Utilization of antenatal ultrasound scan and implications for caesarean section: a cross-sectional study in rural Eastern China. *BMC Health Services Research, 12*(1).

Kongnyuy, E. J., & Van den Brock, N. (2019). The use of ultrasonography in obstetrics in developing countries. *Trop Doct., 37*(2), 70-72.

Krishnamoorthy, N., & Kasinathan, A. (2019). Knowledge and attitude regarding obstetric ultrasound among pregnant women: a cross sectional study. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 5*(7), 2192-2195. Retrieved from http://dx.doi.org/10.18203/2320-1770.ijrcog20162091

Lalor, J. P., & Devane, D. (2019). Information, knowledge and expectations of the routine ultrasound scan. *Midwifery, 23*(1), 13-22.

Maniragena, J., Kasozi, D., Mubuuke, G. R., & Murachi, E. R. (2021). Knowledge, attitudes and practices of pregnant women towards obstetric ultrasound at Mulago Hospital: A Cross-sectional Survey. *Research Square*, 1-18.

Mensah, Y., Nkyekyer, K., & Mensah, K. (2021). Ghanaian woman's experience and perception of ultrasound use in antenatal care. *Ghana Medical Journa, 48*(1), 31.

Oche, O. M., Umar, A. S., Raji, M. O., Kaoje, A. U., Godwin, G., Ango, J. T., & Adamu, H. (2019). Knowledge of the use and indications for obstetric ultrasound scan among women attending a main referral Hospital, Sokoto, Nigeria. *Research in Obstetrics and Gynecology, 2*(5), 55-62.

Ranji, A., & Dykes, A. K. (2020). Ultrasound screening during pregnancy in Iran: womens' expectations, experiences and number of scans. *PubMed, 28*(1), 24-29.

Ross, A. B., DeStigter, K. K., & Reilly, M. (2018). A low-cost ultrasound program leads to increased antenatal clinic visits and attended deliveries at a health care clinic in rural Uganda. *PLoS One, 8*(10).

Saleh, A. A., Idris, G., Dare, A., Yahuza, M. A., Idris, S. K., & Suwaid, M. A. (2017). Awareness and perception of pregnant women about obstetrics ultrasound at Aminu Kano Teaching Hospital. *Sahel Med J., 20,* 38-42.

Shung, K. (2018). Diagnostic ultrasound: Past, present, and future. *J Med BiolEng., 31*(6), 371.

Stephens, M. B., Montefalcon, R., & Lane, D. A. (2020). The maternal perspective on prenatal ultrasound. *J Fam Pract*, 601.

Tautz, S., Jahn, A., Molokommel, I., & Gorgen, R. (2020). Between fear and relief: how rural pregnant women experience foetal ultrasound in a Botswana district hospital. *Social Science and Medicine, 50*(5), 689-701.

Ugwu, A., Osungbade, E., & Erondu, F. (2018). Maternal perspectives of prenatal sonogram in a northeastern population in Nigeria. *Libyan J Med, 4*, 140-142.

Whynes, D. K. (2019). Receipt of information and women´s attitudes towards ultrasound scanning during pregnancy. *Ultrasound Obstet Gynecol, 19*(1), 7-12.

World Health Organization. (2018). *WHO recommendations on Antenatal Care for a Positive Pregnancy Experience.* Geneva: World Health Organization.

Yetwale, A., Kabeto, T., Biyazin, T., & Fenta, B. (2022). Prenatal ultrasound utilization and its associated factors among pregnant women in Jimma Town Public Health Institutions, Ethiopia. *Health Services Research and Managerial Epidemiology, 9,* 1-8.

Zechmeister, I. (2018). Foetal images: the power of visual technology in antenatal care and the implications for women´s reproductive freedom. *Health Care Anal, 9*(4), 387-400.

APPENDICES

QUESTIONNAIRE

Introduction

This study explores the knowledge, attitude and practices of pregnant women about routine ultrasonography in Holy Family Hospital, Berekum. Your response and contribution will be used for academic purposes and no disclosure will be made to any third party. However, you are allowed to discontinue this interview at any stage. Kindly answer the under listed questions by ticking (√**)** the appropriate box or write in the spaces provided. Thank you.

Section A: Socio-Demographic Characteristics

1. Age
    a. 10 – 17 []
    b. 18 – 25 []
    c. 26 – 35 []
    d. 36 – 45 []
    e. >45 []
2. Marital status
    a. Married []
    b. Single []
    c. Divorced []
    d. Widowed []
3. Trimester
    a. 1st []
    b. 2nd []
    c. 3rd []
    d. Unknown []

4. Parity
    a. Multiparous []
    b. Nulliparous []
5. Occupation
    a. Government employee []
    b. Trader []
    c. None []
    d. Housekeeper []
6. Educational status
    a. None []
    b. Primary/JHS []
    c. Secondary []
    d. Tertiary []
7. Religion
    a. Islam []
    b. Christianity []
    c. African Tradition []
    d. Other (specify): ……

Section B: Knowledge of Pregnant Women About Routine Ultrasonography

8. Have you ever heard of obstetric ultrasound before?
    a. Yes []
    b. No []
9. Where did you obtain information about obstetric ultrasound?
    a. Obstetricians []
    b. Midwives/Nurses []

c. Media (Radio/TV) []

d. Family/friends []

e. Internet []

f. Any other: (specify) ……

10. How well do you know about the use of obstetric ultrasound?

a. Extremely well [] b. Moderately well [] c. Slightly well [] d. Not at all []

11. In which of the following ways can ultrasound scan be used, tick as many as you know apply to you;

a. Assess gestational age []

b. Estimate expected date of delivery []

c. Check fetal abnormalities []

d. Gives information about the presentation of fetus []

e. Check abnormalities of the uterus []

f. Assess placental position []

g. Predict sex of baby []

h. Assess growth of the baby []

i. Check fetal wellbeing []

j. Any other: …….

……

…….

Section C: Attitude of Pregnant Women About Routine Ultrasonography

12. Ultrasound is safe during pregnancy

a. Agree []

b. Disagree []

c. Don't know []

13. Ultrasound in an essential investigation during pregnancy

    a. Agree []

    b. Disagree []

    c. Don’t know []

14. I feel comfortable during ultrasound examination

    a. Agree []

    b. Disagree []

    c. Don’t know []

15. Exposure to the scan can cause cancer

    a. Agree []

    b. Disagree []

    c. Don’t know []

16. There is always a lack of communication from the one doing the scan

    a. Agree []

    b. Disagree []

    c. Don’t know []

17. The cost for ultrasound is affordable

    a. Agree []

    b. Disagree []

    c. Don’t know []

18. Obstetric sonography can hurt the baby

    a. Agree []

    b. Disagree []

    c. Don’t know []

19. Will you go for a scan without a doctor’s request?

a. Agree []

b. Disagree []

c. Don't know []

20. Obstetric sonography can lead to a congenital anomaly

a. Agree []

b. Disagree []

c. Don't know []

Section D: Practices of Pregnant Women About Routine Ultrasonography

21. Did you do antenatal scan in the previous pregnancy?

a. Yes []

b. No []

22. Have you done antenatal scan for the current pregnancy?

a. Yes []

b. No []

23. Who requested the scan?

a. Doctor []

b. Myself []

c. Other (specify): …….

24. How many times do you want ultrasound scan performed during pregnancy?

a. One time []

b. Two times []

c. Three times []

d. More than three []

e. None []

25. When do you want it performed?

a. 1st trimester []

b. 2nd trimester []

c. 3rd trimester []

d. Never []

26. In your opinion, which of these factors do you view as a hindrance to the use of obstetric ultrasound;

    a. Long waiting time []

    b. No privacy []

    c. High cost []

    d. Rough handling by health workers []

    e. Being attended to by students []

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Date August 8, 2022

17/8/22

The Administrator
Holy Family Hospital
Berekum

Dear Administrator

PERMISSION TO CONDUCT RESEARCH

I wish to introduce to you the under-listed names of final-year students of the College:

1. **Appiah-Kubi Anita**
2. **Yeboah Edna**
3. **Nyarko Albertha**

As part of the pre-requisite for the award of Diploma in Midwifery, they are to conduct a research study, hence the data collection on **"Knowledge, Attitude and Practices of Pregnant women towards routine Ultrasonography in Holy Family Hospital, Berekum".**

I would be grateful if you could assist them with any material or help they may need to accomplish this task.

Thank you.

Yours faithfully

Approved

T. Nsg Adu

Ernestina Mensah
Supervisor

For: Principal

Received on the 18/08/2022
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