

MAKERERE



UNIVERSITY

THE ROLE OF ROUTINE OBSTETRIC SONOGRAPHY IN PROMOTING UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOAL THREE IN UGANDAN RURAL AREAS.

BY:

NAME: NASIIMA JOSEPH

PROGRAMME: BACHELOR OF SCIENCE IN MEDICAL RADIOGRAPHY.

REGISTRATION NUMBER: 19/U/0339

STUDENT NUMBER: 1900700339.

SUPERVISED BY.

Mr BUSINGE FRANCIS.

A RESEARCH DISSERTATION SUBMITTED TO MAKERERE UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELORS' DEGREE OF SCIENCE IN MEDICAL RADIOGRAPHY OF MAKERERE UNIVERSITY.

DECLARATION:

I, declare that this research report is my original work and has been done by I and has never been submitted in any institution for any academic award of any qualification.

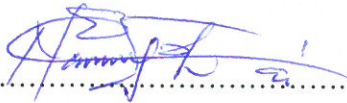
NAME

Nasiima Joseph

19/U/0339

Bachelor of Science in Medical Radiography

SIGNINATURE



APPROVAL:

This research has been done under my supervision and guidance and now ready for submission to Makerere University College of Health Sciences, Radiology department for examination with my approval as the supervisor.

SIGNED: 

Mr Businge Francis

DATE: 14th June, 2023

TABLE OF CONTENTS

DECLARATION:	2
APPROVAL:	2
ABBREVIATIONS:	5
OPERATIONAL DEFINITIONS:	6
ABSTRACT:.....	7
Introduction:.....	7
Objective:	7
Methodology:.....	7
Findings:	7
Conclusion:.....	7
CHAPTER ONE	8
Introduction.	8
1.2 Statement of the problem.	8
1.3 Justification of study.	9
1.4 Study aim	9
1.5 Specific Objectives	9
1.6 Research questions.	9
1.7 Research Scope.	10
CHAPTER TWO	11
LITERATURE REVIEW	11
2.0 Introduction:	11
2.1 Importance of Obstetric Ultrasound:.....	11
2.3 Access to Obstetric Ultrasound in LMICs:	11
2.4 Barriers to Obstetric Ultrasound Services:.....	11
2.5 Impact of Obstetric Ultrasound on Maternal and Child Health Outcomes:	11
2.6 Conclusion:.....	12
CHAPTER THREE	13
METHODOLOGY	13
3.1 Introduction	13
3.2 Study design	13
3.3 Study setting	13

3.4 Study population.....	13
3.5 Sampling procedure.....	13
3.6 Inclusion and Exclusion criteria.....	13
3.6.1 Inclusion criteria	13
3.6.2 Exclusion criteria	13
3.7 Study variables.....	14
3.8 Data collection procedure.....	14
3.9 Data management and analysis.....	14
3.10 Ethical consideration.....	14
3.11 Study Limitation.	14
CHAPTER 4.	15
RESULTS	15
4. 1 Demographics:	15
4.2 Obstetric Ultrasound Awareness:	15
4.3 Obstetric Ultrasound Outcomes:	15
4.4 Obstetric Ultrasound Affordability:	16
CHAPTER FIVE	17
DISCUSION OF RESULTS, CONCLUSIONS AND RECOMMENDATIONS.....	17
5.1 Discussion of Results:.....	17
5.1.1 Utilization of Obstetric Ultrasound:.....	17
5.1.2 Availability and Accessibility:	17
5.1.3 Outcomes of Obstetric Ultrasound:.....	17
5.1.4 Affordability of Obstetric Ultrasound:	17
5.2 Conclusions:	18
5.3 Recommendations:	18
REFERENCES:.....	19
APPENDICES	21
Appendix 1: Consent Form.....	21
Appendix 2: Time Frame	21
Appendix 3: Budget.....	22
Appendix 4: Questionnaire.	23

ABBREVIATIONS:

SDGs- Sustainable Development Goals.

UN-United Nations.

GA- General Assembly.

MCH- Maternal and Child Health.

LMIC- Low-Middle Income Countries.

WHO- World Health Organization

ANC -Antenatal care

OPERATIONAL DEFINITIONS:

Ultrasound: Parity is the number of times a woman has given birth to a live neonate (any gestation) or at 24 weeks or more, regardless of whether the child was viable or non-viable.

Obstetrics: obstetric is the field of study concentrated on pregnancy, childbirth and the postpartum period.

WHO: this is a specialized agency of the United Nations responsible for international public health

SDGs: The Sustainable Development Goals (SDGs) or Global Goals are a collection of 17 interlinked global goals with 169 associated targets which are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.

Mortality rate: this is a measure of number of deaths in a particular population, scaled to the size of that population per unit time.

Ectopic pregnancy: a pregnancy in which the fertilized egg implants outside the uterus

Anomalies: some thing that is deviated from the standard, normal or expected.

Trimester: A period of three months, especially a division of the duration of pregnancy

Parity: the number of times a woman has given birth to a live neonate or at 24 weeks or more regardless of whether the child was viable or non-viable

Gravidity: sum of pregnancies including all live births and pregnancies terminated at less that 6 months or did not result in a live birth

ABSTRACT:

Introduction:

Routine obstetric sonography plays a crucial role in promoting SDG 3 by ensuring healthy lives and well-being for pregnant women and their babies, particularly in rural areas. However, limited access and affordability of obstetric ultrasound services pose significant challenges in achieving this goal in Uganda.

Objective:

The research aimed to investigate the role of routine obstetric sonography in promoting SDG 3 in rural areas of Uganda with a case study of Budadiri Health IV. The study focused on assessing the impact of obstetric ultrasound on pregnancy outcomes, access to services and affordability.

Methodology:

A sample size of 180 pregnant women was interviewed using a questionnaire at Budadiri Health centre IV, in Sironko District. The questionnaire covered various aspects including demographics, obstetric ultrasound awareness, outcomes, and affordability. The data collected was analyzed using descriptive statistics.

Findings:

Results indicate that only 25.6% of the respondents received obstetric ultrasound services during their current pregnancy. Among these, 50 % reported experiencing complications during pregnancy, while 42.4% had ever encountered complications during delivery. Obstetric ultrasound identified potential complications in 65.6% of cases during pregnancy.

However, significant challenges related to availability and affordability were evident. A substantial proportion of women (74.4%) were unable to access obstetric ultrasound services at their preferred health facilities. Affordability;

Conclusion:

Findings underscore the potential benefits of routine obstetric sonography in improving pregnancy and neonatal outcomes in rural areas of Uganda. However, limited access and affordability of obstetric ultrasound services pose significant barriers to achieving SDG 3.

Addressing the challenges related to access and affordability is essential to policy makers, healthcare providers and stakeholders in developing strategies to enhance the provision and utilization of routine obstetric sonography, thereby contributing to achievement of SDG 3 in Ugandan rural areas.

CHAPTER ONE

Introduction.

The United Nations General Assembly (UN-GA) established the Sustainable Development Goals (SDGs) in September 2015, with the aim of achieving them by 2030. SDG 3 focuses on Good Health and Well-being, aiming to ensure healthy lives and promote well-being for all. One of the key targets of SDG 3 is to reduce maternal and neonatal mortality rates worldwide.

Maternal and neonatal deaths continue to be a significant global concern, particularly in low- and middle-income countries. The use of obstetric ultrasound has shown great potential in reducing these mortality rates by enabling early detection and appropriate management of pregnancy complications. Obstetric ultrasound has become increasingly accessible in many low- and middle-income countries, thanks to advancements in machine durability, portability, and affordability (Isabirye et al.).

However, despite these advancements, the routine availability of antenatal ultrasound services in public rural facilities in Uganda remains limited. This lack of accessibility hinders the potential to address SDG 3 targets 1 and 2, which aim to reduce maternal mortality and preventable deaths of newborns and children under the age of 5.

In order to effectively address these challenges, it is crucial to understand the current status of obstetric ultrasound utilization in rural areas of Uganda. This research report focuses on the utilization of obstetric ultrasound services in Budadiri Health Centre IV, located in the rural district of Sironko. By examining the availability, accessibility, and affordability of obstetric ultrasound services in this specific rural facility, the report identifies the barriers that prevent routine utilization of ultrasound in antenatal care.

The findings of this research report provide valuable insights for healthcare practitioners, policymakers, and planners in Budadiri Health Centre IV and similar rural facilities in Uganda. By addressing the gaps in obstetric ultrasound provision, necessary interventions and strategies can be developed to promote the routine use of ultrasound in antenatal care. Ultimately, the goal is to reduce maternal and neonatal mortality rates, contribute to the achievement of SDG 3, and improve the overall health and well-being of pregnant women and their infants in rural Uganda.

1.2 Statement of the problem.

The limited availability and accessibility of obstetric ultrasound services in public rural healthcare facilities in Uganda pose significant barriers to achieving Sustainable Development Goal 3 targets related to reducing maternal and neonatal mortality. This problem stems from inadequate infrastructure, equipment, and trained personnel, resulting in missed opportunities for early detection and management of pregnancy complications. Additionally, factors like long distances, transportation challenges, and high costs hinder pregnant women's access to these services. Addressing these barriers is crucial for improving maternal and neonatal health outcomes. This research report aims to identify and address these challenges, providing insights

and recommendations to promote routine utilization of obstetric ultrasound in Ugandan rural areas, thus contributing to SDG 3's objective

1.3 Justification of study.

The potential to reduce maternal and neonatal deaths through the use of obstetric ultrasound is significant and directly aligns with SDG 3 targets 1 and 2 (Isabirye et al., 2014; UN General Assembly, 2015). However, in many public rural facilities in Uganda, access to routine antenatal ultrasound services is limited. The lack of availability of obstetric ultrasound in rural areas hinders the early detection and management of pregnancy complications, thereby impacting maternal and child health outcomes. Uganda has a high maternal mortality ratio, and improving obstetric care is crucial to address this issue. Therefore, this study aimed to investigate the current factors hindering the routine use of obstetric ultrasound in rural settings of Uganda. By identifying these barriers, the study sought to provide valuable insights for health practitioners, policymakers, and planners to promote the integration of routine obstetric ultrasound services in rural areas. The findings of this study inform evidence-based strategies and interventions to enhance obstetric care, reduce maternal and neonatal mortality, and contribute to the achievement of SDG 3 targets. By addressing the gaps in access and utilization of obstetric ultrasound, this research has implications for improving the health and well-being of pregnant women and their infants in rural Uganda.

1.4 Study aim

To establish the role of routine obstetric ultrasound in rural settings of Uganda as a way of promoting Sustainable Development Goal 3.

1.5 Specific Objectives

To assess the current availability and utilization of obstetric ultrasound services in Budadiri Health Centre IV in Sironko District, Uganda.

To identify the barriers and challenges faced by pregnant women in accessing routine obstetric ultrasound services in the rural setting of Budadiri Health Centre IV.

To propose recommendations and strategies to overcome the identified barriers and improve the integration of routine obstetric ultrasound services in Budadiri Health Centre IV, with a focus on promoting sustainable development and achieving SDG 3 targets in the region.

1.6 Research questions.

What is the current availability and utilization of obstetric ultrasound services among pregnant women attending Budadiri Health Centre IV in Sironko District, Uganda?

What are the main barriers and challenges faced by pregnant women in accessing routine obstetric ultrasound services in the rural setting of Budadiri Health Centre IV?

What recommendations can be made to overcome the identified barriers and improve the integration of routine obstetric ultrasound services in Budadiri Health Centre IV, with a focus on promoting sustainable development and achieving SDG 3 targets in the region?

1.7 Research Scope.

This study focused on exploring the role of routine obstetric ultrasound in promoting United Nations Sustainable Development Goal 3 (SDG 3) in rural areas of Uganda, specifically within the context of Budadiri Health Centre IV in Sironko District. The study aimed to provide an in-depth analysis of the past status of obstetric ultrasound services, barriers to access, and the potential impact on maternal and child health outcomes.

The study involved data collection from a sample of 180 pregnant women who had accessed antenatal care services at Budadiri Health Centre IV. The research assessed the availability and utilization of obstetric ultrasound services, examined the challenges faced by pregnant women in accessing these services, and investigated their perceptions of the benefits of obstetric ultrasound.

A quantitative research approach was employed, utilizing a structured questionnaire to collect data. The sample size was determined based on feasibility and statistical considerations. Data analysis involved descriptive statistics to provide an overview of the findings and inferential analysis to explore associations and relationships between variables.

It is important to acknowledge that the research findings may not be generalizable to all rural areas of Uganda, as the study was confined to the specific context of Budadiri Health Centre IV. However, the insights generated from this study contribute to the existing knowledge on the role of routine obstetric ultrasound in promoting SDG 3 in similar rural settings and provide recommendations for improving maternal and child health outcomes.

The following sections of this study present the detailed findings, analysis, and conclusions based on the data collected during the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction:

The role of routine obstetric ultrasound in promoting United Nations Sustainable Development Goal 3 (SDG 3) in rural areas is a topic of significant importance in improving maternal and child health outcomes. Maternal and neonatal mortality rates remain high in low- and middle-income countries (LMICs), including Uganda, highlighting the need for effective interventions and strategies. This literature review aims to provide an overview of existing research and evidence related to the utilization and impact of obstetric ultrasound services in LMICs, with a specific focus on rural areas in Uganda.

2.1 Importance of Obstetric Ultrasound:

Obstetric ultrasound plays a crucial role in antenatal care by providing valuable information about the health and development of the fetus, as well as identifying potential complications during pregnancy and delivery. Studies have shown that ultrasound can contribute to the reduction of maternal and neonatal mortality rates (WHO, 2016). Early detection of high-risk pregnancies and appropriate management based on ultrasound findings can lead to improved outcomes for both mothers and newborns (Pooh et al., 2015).

2.3 Access to Obstetric Ultrasound in LMICs:

Despite the recognized benefits of obstetric ultrasound, its availability and accessibility in LMICs, particularly in rural areas, remain limited. Many health facilities in these settings lack the necessary equipment, trained personnel, and infrastructure to provide routine obstetric ultrasound services (Akaba et al., 2017). This results in missed opportunities for early detection of complications and appropriate intervention, contributing to poor maternal and child health outcomes.

2.4 Barriers to Obstetric Ultrasound Services:

Several factors contribute to the limited access to obstetric ultrasound in rural areas of LMICs. Financial constraints, including high costs of equipment and maintenance, pose challenges for health systems with limited resources (Chervenak et al., 2015). Inadequate training and capacity building for healthcare providers further hinder the provision of ultrasound services (Makanga et al., 2018). Additionally, infrastructural limitations and geographical barriers, such as long distances to health facilities, transportation challenges, and lack of electricity, impact the availability and utilization of obstetric ultrasound services (LaBarre et al., 2017).

2.5 Impact of Obstetric Ultrasound on Maternal and Child Health Outcomes:

Studies conducted in LMICs have demonstrated the potential impact of routine obstetric ultrasound on improving maternal and child health outcomes. For instance, in a study conducted in a rural area of Nigeria, the use of ultrasound significantly reduced the incidence of adverse maternal and neonatal outcomes (Oladapo et al., 2018). Similarly, research in rural settings of Bangladesh revealed that obstetric ultrasound led to better management of high-risk pregnancies and improved neonatal survival rates (Haider et al., 2017).

2.6 Conclusion:

The literature reviewed emphasizes the importance of routine obstetric ultrasound in promoting SDG 3 in rural areas of LMICs, including Uganda. Despite the recognized benefits, barriers to access and limited availability of obstetric ultrasound services persist. Addressing these challenges through increased investment in equipment, training of healthcare providers, and improving infrastructure can contribute to improved maternal and child health outcomes. This study aims to contribute to the existing body of knowledge by identifying the specific factors hindering routine ultrasound use in Ugandan rural areas and proposing solutions to promote the effective utilization of obstetric ultrasound services.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This study aimed to investigate the role of routine obstetric ultrasound in promoting United Nations Sustainable Development Goal 3 (SDG 3) in rural areas. The study design employed a cross-sectional approach to assess the utilization and impact of obstetric ultrasound services. The study was conducted in Budadiri Health Centre IV, located in the Sironko district of Uganda. The study population consisted of pregnant women attending antenatal care at the health center. A purposive sampling procedure was used to select participants who met the inclusion criteria, which included pregnant women aged 18-45 years. Exclusion criteria were applied to exclude women who were not pregnant and those under the age of 18.

3.2 Study design

This study utilized a cross-sectional design to assess the role of routine obstetric ultrasound in promoting United Nations Sustainable Development Goal 3 (SDG 3) in rural areas. The cross-sectional approach allowed for the collection of data from one person in time, providing a snapshot of the utilization and impact of obstetric ultrasound services among pregnant women in the study setting

3.3 Study setting

The study was conducted at Budadiri Health Centre IV, located in the Sironko district of Uganda. Budadiri Health Centre IV serves as a primary healthcare facility and offers antenatal care services to pregnant women in the surrounding rural areas. The choice of this setting was based on its accessibility and representation of typical rural healthcare facilities in Uganda.

3.4 Study population

The study population consisted of pregnant women attending antenatal care at Budadiri Health Centre IV during the study period.

3.5 Sampling procedure

. A purposive sampling procedure was employed to select participants who met the inclusion criteria

3.6 Inclusion and Exclusion criteria

3.6.1 Inclusion criteria

Inclusion criteria included pregnant women aged 16-45 years who were receiving antenatal care at the health center.

3.6.2 Exclusion criteria

Pregnant women who were under the age of 16 were excluded from the study.

3.7 Study variables

The main variables of interest included the utilization of obstetric ultrasound services, knowledge about the benefits of ultrasound, and perceived barriers to accessing ultrasound services. Additional variables included demographic characteristics, gestational age, previous pregnancy history, and antenatal care attendance. These variables were assessed through the structured questionnaire administered to the study participants.

3.8 Data collection procedure

Data collection was conducted using a structured questionnaire consisting of closed-ended and open-ended questions. The questionnaire was administered through face-to-face interviews with the participants. The questionnaire covered various aspects, including participants' socio-demographic information, obstetric history, knowledge about obstetric ultrasound, and experiences with accessing ultrasound services. The interviews were conducted in a private and comfortable environment to ensure the participants' confidentiality and willingness to provide accurate responses

3.9 Data management and analysis

Collected data was checked and tallied to ensure accuracy, completeness and appropriateness before leaving the study site. Data was sorted and analyzed using Microsoft excel software then analyzed using descriptive statistics.

3.10 Ethical consideration.

Ethical approval was obtained from the Makerere University College of Health Sciences, Department of Radiology and the In-charge of Budadiri Health Centre IV. Informed consent was obtained from each participant before data collection, ensuring their voluntary participation and confidentiality. Participants were informed about the purpose and potential benefits of the study, and they had the right to withdraw at any stage without repercussions. Data were stored securely and used only for research purposes, ensuring anonymity and confidentiality.

3.11 Study Limitation.

The cross-sectional design limited the ability to establish causality between variables. Second, the study was conducted in a specific rural setting in Uganda, which may limit the generalizability of the findings to other regions or countries. Lastly, the self-reported nature of the data might be subject to recall bias or social desirability bias.

CHAPTER 4.

RESULTS

4.1 Demographics:

Age: The majority of participants were between 21-30 years old (65.6%), followed by those above 30 years (26.1%), and 16-20 years (8.3%).

Level of Education: The highest percentage of participants had completed S.1-S.4 (65%), followed by those below P.7 (22%) and with a tertiary or university education (12%), and a smaller percentage had completed A 'level (1%).

Marital Status: The majority of participants were married (84.4%), followed by single (12.2%), and divorced (5%). Only a few participants were widows (3.4%).

Occupation: The participants had diverse occupations, including farmers, businesswomen, teachers, few healthcare workers and most of them being peasants.

4.2 Obstetric Ultrasound Awareness:

Out of the 180 pregnant women interviewed, only 46 (25.6%) had received obstetric ultrasound services during their current pregnancy.

Among those who had received ultrasound services, 18 (39.1%) reported that the service was available at their preferred health facility, while 28 (60.9%) reported that it was not available.

Regarding the accessibility of ultrasound services in terms of location and distance, 24 (13.3%) of the participants stated that the service was accessible, while 156 (86.7%) reported that it was not accessible.

Before receiving the ultrasound service, 43 (93.5%) of the participants who had received the service in the current pregnancy were informed about its benefits, while the remaining 6.5% were not informed.

4.3 Obstetric Ultrasound Outcomes:

Of the participants who had received ultrasound services, 23 (50%) reported experiencing complications during pregnancy, while the other 23 (50%) did not.

Regarding complications during delivery, 42.4% of the participants who had received ultrasound services reported experiencing complications, while the remaining 57.6% did not.

Among those who received ultrasound services, 65.6% reported that the ultrasound helped to identify potential complications during pregnancy, while 34.4% reported that it did not.

Similarly, 52.2% of participants stated that the ultrasound helped to identify potential complications during delivery, while 47.8% reported that it did not.

In terms of improving pregnancy outcomes, 56.4% of participants who had received ultrasound services reported improvement, while 43.6% did not observe any improvement.

Regarding neonatal outcomes, 61% of participants reported improvement due to ultrasound services, while the remaining 39% did not observe any improvement.

4.4 Obstetric Ultrasound Affordability:

Among the participants who had received ultrasound services, 37 (80.4%) reported incurring costs for the service, while 29.6% did not incur any costs.

The cost of ultrasound services varied, with the majority 23(62.2%) spending between 25,000 - 50,000 Ugandan shillings, while 37.8% spent below 25,000 Ugandan shillings.

In terms of affordability, 20 (43.5%) of participants who received ultrasound services found the costs to be affordable, while 56.5% considered them unaffordable.

CHAPTER FIVE

DISCUSSION OF RESULTS, CONCLUSIONS AND RECOMMENDATIONS.

5.1 Discussion of Results:

5.1.1 Utilization of Obstetric Ultrasound:

The study revealed a low utilization rate of obstetric ultrasound services among pregnant women in the study setting, with only 25.6% of participants having received ultrasound services during their current pregnancy. This finding indicates a significant gap in accessing this important diagnostic tool. Possible reasons for the low utilization include limited availability of ultrasound services, lack of awareness about the benefits of ultrasound, and financial constraints as suggested through discussions with participants.

5.1.2 Availability and Accessibility:

The study highlighted the challenges in the availability and accessibility of ultrasound services. Among participants who received ultrasound services, only 39.1% reported availability at their preferred health facility, while 60.9% reported non-availability. This suggests the need to expand the reach of ultrasound services to ensure consistent availability at desired locations. Moreover, the majority of participants (86.7%) perceived ultrasound services as inaccessible due to issues related to distance and location.

5.1.3 Outcomes of Obstetric Ultrasound:

The findings demonstrated that ultrasound played a crucial role in identifying potential complications during pregnancy and delivery. Approximately 65.6% of participants who received ultrasound services reported that ultrasound helped in detecting complications. This emphasizes the importance of ultrasound in improving maternal and neonatal health outcomes by enabling early identification and appropriate management of high-risk pregnancies. However, it is noteworthy that despite the use of ultrasound, 50% of participants still experienced complications, suggesting that ultrasound alone may not eliminate all risks and complications.

5.1.4 Affordability of Obstetric Ultrasound:

The affordability of ultrasound services emerged as a significant factor affecting utilization among participants who received ultrasound services, 80.4% reported incurring costs. The majority (62.2%) spent between 25,000 - 50,000 Ugandan shillings for the service. However, more than half of the participants (56.5%) considered the costs to be unaffordable. This highlights the financial burden associated with ultrasound services, which acts as a barrier for many pregnant women.

5.2 Conclusions:

The findings of this study indicate the need for targeted interventions to address the challenges and barriers related to the utilization of obstetric ultrasound services in the study setting. The conclusions drawn from the study are as follows:

- There is a significant gap in the utilization of obstetric ultrasound services among pregnant women in the study setting, indicating the need for interventions to increase awareness and access to these services.
- Availability and accessibility of ultrasound services at preferred health facilities need to be improved to meet the demands of pregnant women and reduce barriers to utilization.
- Obstetric ultrasound plays a valuable role in identifying potential complications during pregnancy and delivery, contributing to improved maternal and neonatal health outcomes.
- The affordability of ultrasound services poses a significant challenge, with many pregnant women considering the costs to be unaffordable. Measures should be implemented to reduce the financial burden associated with ultrasound services.

5.3 Recommendations:

Based on the study findings, the following recommendations are made:

- Strengthening the availability and accessibility of obstetric ultrasound services in rural areas through the provision of adequate ultrasound machines, training of healthcare providers, and establishing partnerships with ultrasound service providers.
- Enhancing awareness among pregnant women, their families, and healthcare providers about the benefits of obstetric ultrasound in identifying potential complications and improving maternal and neonatal health outcomes.
- Implementing strategies to make ultrasound services more affordable, such as subsidizing costs, introducing insurance coverage, use of teleultrasound services and mobile ultrasound services or integrating ultrasound services into existing maternal healthcare programs.
- Conducting further research to explore the barriers and facilitators of obstetric ultrasound utilization, including qualitative studies to gain a deeper understanding of the perspectives and experiences of pregnant women and healthcare providers.

By implementing these recommendations, healthcare providers and policymakers can work towards improving the utilization of obstetric ultrasound services, ultimately leading to better maternal and neonatal health outcomes in the study setting and similar contexts.

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APPENDICES

Appendix 1: Consent Form

I am Nasima Joseph a student at Makerere University Kampala, I am doing my research on the role of obstetric ultrasound in promoting Sustainable Development Goal 3 in Rural Areas of Uganda a case study of Budadiri Health Centre IV.

The findings from the research are primarily for academic purposes and no additional medical services will be provided to the participant.

You have a right to refuse the researcher from obtaining information from you by not signing the consent below.

IHave fully understood the type and value of research I am going to participate in and hereby allow the researcher and his participants to obtain information from me.

Appendix 2: Time Frame

S/N o	ACTIVITY	JUNE 2022	JULY 2022	AUGU ST 2022	SEPTEMBE R 2022	April 2023	MAY 2023	JUNE 2023
01	Topic selection							
02	Review of existing literature							
03	Proposal writing							
04	Data collection							
05	Data analysis							
06	Report writing							
07	Report approval							

NOTE: The activity done or to be done corresponds with the month in which that activity was done according to the shaded part.

Appendix 3: Budget

ITEM	QUANTITY	UNIT COST	AMOUNT
Stationery			
Pens	4	1,000	4,000
Markers	10	1,000	10,000
Pencils	2	200	400
Flash disk	1	25,000	25,000
Sub total			39,400/=
Secretarial services			
Proposal printing and Binding	4 copies	5,000	20,000
Report printing and binding	5 copies	5,000	25,000
Consent forms printing	200	200	40,000
Questionnaire printing	200	200	40,000
Sub- total			125,000/=
Transport cost	To and FRO	40,000	80,000
Feeding	2 weeks	12,000	240,000
Accommodation	2 weeks	100,000	200,000
Participants refreshment	180	1000	180,000
Grand total			Ugx. 864,400/=

Appendix 4: Questionnaire.

Demographics:

What is your age?

.....
.....

What is your level of education?

.....
.....

What is your marital status?

.....
.....

What is your occupation?

.....
.....

What is your monthly household income (Ugandan shillings)?

.....
.....

How many pregnancies have you had in the past?

.....
.....

Have you ever had a miscarriage or stillbirth?

.....
.....

How many living children do you currently have?

.....
.....

Obstetric Ultrasound Awareness:

Have you ever received obstetric ultrasound services during your current pregnancy?

.....
.....

Was the obstetric ultrasound service available at your preferred health facility?

.....
.....

Was the obstetric ultrasound service accessible to you in terms of location and distance?

.....
.....

Were you informed about the benefits of obstetric ultrasound services before you received the service?

.....
.....

Obstetric Ultrasound Outcomes:

Did you experience any complications during pregnancy?

.....
.....

Did you experience any complications during delivery?

.....
.....

Did the obstetric ultrasound service help to identify any potential complications during your pregnancy?

.....
.....

Did the obstetric ultrasound service help to identify any potential complications during delivery?

.....
.....

Did the obstetric ultrasound help to improve your pregnancy outcome?

.....
.....

Did the obstetric service help to improve your neonatal outcome?

.....
.....

Did you receive any counseling or advice based on the results of the obstetric ultrasound service?

.....
.....

Did you feel comfortable during the obstetric ultrasound examination?

.....
.....

Were you satisfied with the quality of obstetric ultrasound service?

.....
.....

Did you experience any adverse effects or complications as a result of obstetric ultrasound service?

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.....

Obstetric Ultrasound Affordability:

Did you incur any costs for the obstetric ultrasound service?

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.....

If yes, how much did you spend?

.....
.....

Were the costs for the ultrasound service affordable for you?

.....
.....

END