FACTORS CONTRIBUTING TO OBSTETRICAL FISTULAS AMONG MOTHERS ATTENDING POST NATAL CLINIC AT JINJA REGIONAL REFERRAL HOSPITAL

BY

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DECEMBER 2018

DECLARATION

I **Abdi Shakur Sheikh Mohamud** declare that the work presented in this research report is my original work and has never been presented to any university before for any award.

I therefore present it for the Award of a Bachelors of Medicine and Surgery

Signature: …… **Date: ……**

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APPROVAL

This dissertation has been written and approved under my supervision.

…… …….

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DEDICATION

I dedicate this research book to my beloved parents for all the financial support and the love they have given me throughout my studies. May the Almighty God richly reward you abundantly.

ACKNOWLEDGEMENT

I would like to thank the Almighty God for having made me successful in completion of this report amidst all challenges in my studies.

I appreciate my bothers: Abdirahman sheikh mohamud, Abdiaziz sheikh mohamud, friend; Nshuti Jovan for their encouragement during this course. Special thanks go to my parents for having supported me financially, emotionally and spiritually throughout the course.

I also appreciate the staff of Jinja Regional Referral hospital who assisted me during the time of data collection.

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May God bless them.

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DEFINITION OF KEY TERMS

Patient:	A person who requires medical care or a person under a physician's care for a particular disease or condition.
Factors	Is the fact or characteristic of interest that the researcher would like to handle, observe or manipulate in the research.
Hospital	An institution that provides medical, surgical or psychiatric care and treatment for the sick or injured
Postnatal clinic	Is a clinic where mothers and new born babies are taken care of following labour.
Fistula	An abnormal opening between the walls of one or two organs
Obstetric fistulas	This is an abnormal opening between the walls of two genital organs that results from labour complications.

LIST OF ABBREVIATIONS

JRRH	: Jinja Regional Referral Hospital
MoH	: Ministry of Health
UBOS	: Uganda Bureau of Statistics
UNFPA	: United Nations Population Fund
VVF	: Vesico Vaginal Fistula
WHO	: World Health Organisation

ABSTRACT

Ideally pregnant mothers in labour are to deliver safely without any complications like fistulas under normal circumstances. However, worldwide, obstetrical fistula remains a childbirth injury that has been largely neglected despite the devastating impact it has on the lives of affected girls and women.

The purpose of the study was to assess factors contributing to obstetrical fistulas among mothers attending post natal clinic at Jinja Regional Referral Hospital.

The study used a descriptive cross sectional design employing quantitative methods of data collection. The study was selected because it helped the researcher to collect data in the shortest period. Thirty respondents were chosen because it helped the researcher to collect data in minimal time.

Results: On socio cultural related factors leading to obstetrical fistulas showed that 21/30 (70%) of the respondents have ever seen a woman with a fistula. on whether respondents have nearby health facility in their area, 18/30(60%) of respondents said Yes. According to socio-economic related factors leading to obstetric fistulae, the greatest number of respondents (95%) agreed that lack of essential medical -surgical supplies in health facility can increase the risk of obstetric fistula. Regarding unavailability of specialized personnel, the overwhelming number of respondents (92%) agreed.On Measures to prevent obstetric fistulas, the greatest number of respondents (90%) agreed on creation of tough laws against early marriages and the highest number of the respondents (86%) agreed on availability of emergency obstetrical care.

Conclusion; Limited medical- surgical supplies, inadequate CMEs, and understaffing among others predisposed women to obstetric fistulas.

Recommendations: Training of health workers on fistula prevention and management, ensuring adequate and medical supplies among others.

CHAPTER ONE: INTRODUCTION

This chapter involved the introduction, problem statement, purpose of the study, specific objectives, research questions and justification for the study.

1.1 Background of the study

According to Walraven, (2015) an obstetrical fistula is an abnormal passage /opening between the genital tract and the urinary tract or intestinal tract. It may also be defined as an obstetrical condition in which a hole develops in the birth canal as a result of child birth. This can be between the vagina and the rectum, ureter, or the urinary bladder, (Kalilani et al., 2013).

Hancock, Browning, (2009) also defined fistula as obstetric if it results from the process of labour or its management. It can result in incontinence of urine or feces. Complications may include depression, infertility, social isolation, and poverty, United Nations Population Fund (UNFPA, 2017).

The most direct consequence of a vaginal fistula is the constant leaking of urine, feces and blood as a result of a hole that forms between the vagina and bladder or rectum. This leaking has both physical and societal penalties, (Holme, Breen & MacArthur, 2017). Furthermore, nerve damage that can result from the leaking can cause women to struggle with walking and eventually lose mobility. In an attempt to avoid the dripping, women limit their intake of water and liquid which can ultimately lead to dangerous cases of dehydration, (Wallace, 2012).

Similarly, ulceration and infections can persist as well as kidney disease and kidney failure which can all lead to death. Furthermore, only a quarter of women who suffer a fistula in their first birth are able to have a living baby and therefore have minuscule chances of conceiving a healthy baby later on. In addition, some women due to Vesco Vaginal Fistula and other complications from childbirth, do not survive, (Roenneburg, Genadry & Wheeless, 2015).

Globally, World Health Organisation (WHO, 2018) estimates that 50 000 to 100 000 women are affected by obstetric fistula each year. The prevalence of obstetric Vesico Vaginal Fistula (VVF) is directly related to the prevalence of obstructed labor, the accessibility of emergency obstetric care, including facilities capable of performing cesarean delivery, (Karateke et al., 2015).

In Africa, child marriage remains common in poor nations predisposing women to labour complications. A very high percentage of girls in Ethiopia (45%), Sudan (42%), and Mali (45%) are married and give birth by the age of 18 which increases their risk to fistulas, (Hilton, 2013).

In sub-Saharan Africa, 33,000 new fistula cases occur each year and this high incidence is attributed to obstetric care services being unavailable, inaccessible, underutilized or of low quality, (Barageine, 2014). The fistula problem is most severe in the region but fistulas are also found in other parts of the world where fertility is high, the status of women is low, and obstetric services are poor, (Miller & Webster, 2015).

In Kenya, it is estimated that fistula occurrence stands at 3 to 4 women for every 1,000 deliveries. There are an estimated 3,000 new cases of fistula each year recorded with only 7.5% able to access medical care for the condition, and others remain in a devastating state for a prolonged period of time due to poor economic state, (Maryanne Waweru-Wanyama, 2014).

In Uganda, the national prevalence of fistula is two per cent among women aged 15–49 years and the prevalence is highest in the western region where one in 25 women have ever been affected. Most of the genital fistulas in low resource countries follow prolonged and neglected obstructed labour and other obstetric causes include destructive deliveries, Uganda Bureau of Statistics (UBOS, 2012).

1.2 Problem Statement

Worldwide, obstetrical fistula remains a childbirth injury that has been largely neglected despite the devastating impact it has on the lives of affected girls and women, (WHO, 2014). Women with obstetrical fistula leak urine (and sometimes stool if the fistula involves the rectum), develop associated physical and mental health problems, and are often abandoned by their husbands and families hence becoming socially isolated, (Roush, 2014).

In many parts of the country, there is an increase of obstetrical fistula related cases being registered in various health facilities, Ministry of Health (MoH, 2015). This is the current situation in Jinja district where between 10-15 cases are registered per month at Jinja Regional Referral hospital Health Service Information System (HMIS, 2016). In addition, hospital records show that every 6 months, about 160 women from various parts of the country are treated at a health camp conducted at the hospital. It has also been established that many of these women who have been affected have also reported serious challenges as regards their marriages and discomfort in public, (HMIS, 2017). Since few studies have been done about the topic, the researcher found it necessary to carry out a study on factors contributing to obstetrical fistulas among mothers attending post natal clinic at JRRH, identify the root causes of the problem and offer solutions to both health officials and women of reproductive age on how to combat it.

1.3 General Objective

The purpose of the study was to find out the factors contributing to obstetrical fistulas among mothers attending post natal clinic at Jinja Regional Referral Hospital.

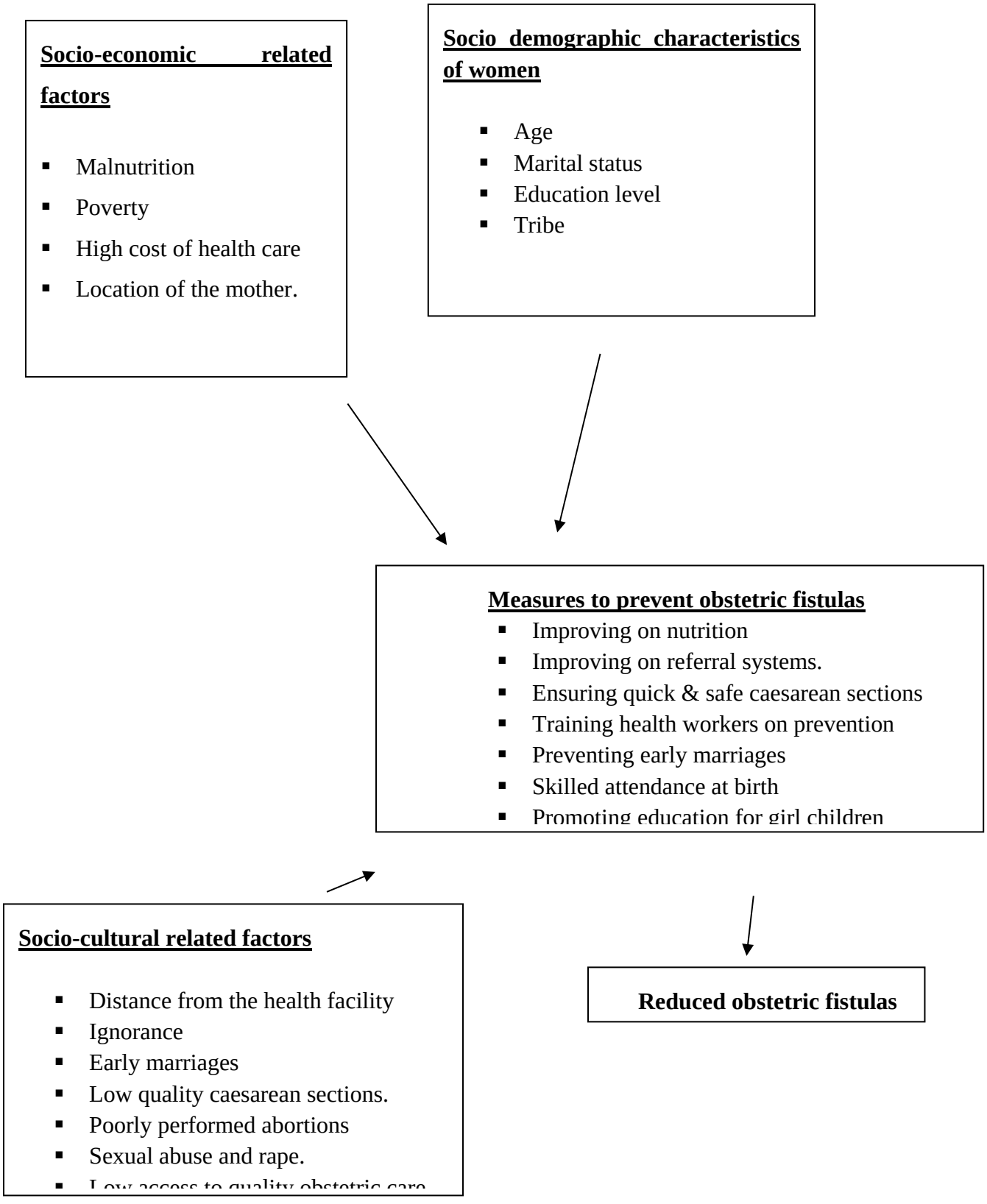
1.4 Specific Objectives

1. To assess the social-cultural related factors leading to obstetrical fistulas among women of reproductive age at Jinja Regional Referral Hospital.
2. To identify the socio-economic related factors leading to obstetrical fistulas among women of reproductive age at Jinja Regional Referral Hospital.
3. To identify measures which can be undertaken to prevent obstetrical fistula among women of reproductive age at Jinja Regional Referral Hospital.

1.5 Research Questions

1. What were the social-cultural related factors leading to obstetrical fistula among women of reproductive age at Jinja Regional Referral Hospital?
2. What were the socio-economic related factors that contribute to obstetrical fistula among women of reproductive age at Jinja Regional Referral Hospital?
3. What measures were undertaken to prevent obstetrical fistula among women of reproductive age at Jinja Regional Referral Hospital?

1.6 Conceptual framework



1.7 Justification

Obstetric fistulas are a major challenge faced by mothers during labour. Despite this concern, measures put forward by the Ministry of Health and other key stake holders in preventing obstetric fistulas among mothers have not yet been successful. Therefore, this study was conducted to generate information which would be utilized by the following beneficiaries:

The policy makers in the Ministry of Health would be able to understand why cases of Vesco vaginal fistula were still on the increase especially in rural districts and come up with measures to combat the problem.

The data collected would sensitize mothers attending Jinja Regional Referral Hospital on the risk factors of obstetrical fistulas and study findings would help them make improvements on the measures already available to assist reduce on obstetric fistulas among mothers during labour.

Since little research was done on the topic, the findings would be used by other researchers/scholars for reference purposes.

The study is to enable the researcher acquire more knowledge regarding obstetrical fistula and it is also one of the requirement towards the award of a Bachelors of Medicine and Bachelors of Surgery by Kampala International University.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter described the various literatures of other authors which are related to the specific objectives of the study which were the social-cultural related, socio-economic related factors contributing to obstetrical fistulas and measures of preventing obstetrical fistulas.

2.2 Social-cultural related factors leading to obstetrical fistulas

According to Melah, (2009) in Nigeria, taking more than two hours to reach a health facility was a significant risk factor for developing obstetric fistula. Findings show that distance of more than 3km from the women's homes to the health facilities is a risk factor for obstetric fistula. Transport problems and long distances have been identified as contributors to delay in reaching the health facilities.

In Zambia, a study by Wall, (2012) identified ignorance as one of the factors associated with obstetric fistulas. These causes delay to seek care due to inability of the couple to appreciate the danger signs in pregnancy and labour coupled by poor cultural beliefs; these pose a pregnant woman at a risk of native medicine use which may result into abnormally strong uterine contractions with poor cervical dilatation thus obstetric fistulas.

Similarly, (Fronczak et al., 2013) in their study reported lack of access to good quality obstetric care including skilled birth attendance during labor and delivery as one of the most important underlying causes of obstetrical fistula, access to health care might be due to delay in deciding to seek care, delay in reaching the health facility as well as delay in receiving sufficient care from the health facility.

Furthermore, Katie Toon, (2017) in her study reported low quality caesarean section to be one of the causes of fistulas. The hospital might have a shortage of essential medical supplies and surgical equipment, or even electricity and running water. Some staff could lack skills and might not assess the need for a Cesarean-section in time or at all. Even if an operation is carried out, it could be the cause of the problem itself.

In the contrary, a study by Requejo, (2013) also reveals sexual abuse and rape which happens especially in conflict/post-conflict areas as potential causes for Vesco vaginal fistulas. This occurs when the person abused is of young age with under developed genitals with the abuser being with well-developed muscular genitals.

Similarly, Singer, (2016) carried out a study to determine the increasing cases of Vesco vaginal fistulas in three rural districts of Zimbabwe. His findings established that about 20% of cases reported among women were as a result of poorly performed abortions by non-trained health personnel. This may result in to perforation of the genital tract leading to VVF.

In addition, gender discrimination has also been identified as a leading cause of VVF. Because of low status in many communities, women are often lacking decision making and the existence of this problem is a major determinant in the health seeking behaviour of women. For example if labor becomes obstructed and all local methods fail, a woman might only be taken to the hospital only if consent is given by her husband or the in-laws, (Ijaiya & Aboyeji, 2016).

Genadry, (2013) in his study reported early marriages and child birth as precipitating factors to obstetrical fistulas. Young mothers who are poor and malnourished may have under-developed pelvises which may lead to obstructed labour. In fact, obstructed labor is responsible for 76% to 97% of Vesco vagina fistulae.

According to the study conducted by (Roka et al., 2013) in Kenya on the factors associated with obstetric fistulae occurrence among patients attending selected hospitals, educational status was identified to be associated with obstetric fistulas. Women who had primary education, secondary and higher education were less likely to suffer obstetric fistula than illiterate women

2.3 Socio-economic related factors leading to obstetric fistulae

According to a study by Chibika, (2013) carried out in three rural villages of Lusaka Zambia, malnutrition was identified as a major factor contributing to Vesco vaginal fistula among women. This is mainly due to the fact that malnutrition also leads to poor bone development and orthopedic disorders that can contribute to complications during childbirth.

In addition, Hilton & Ward, (2014) in their study reported that poor nutrition produces such high rates of fistula cases. Lack of access to proper nutrition causes stunted growth, this stunted growth causes expecting mothers to have pelvic bones unequipped for proper birth, this weak and underdeveloped bone structure increases the chances that the baby will get stuck in the pelvis during birth, cutting off circulation and leading to a rotting away of tissue.

Similarly, (Brodman Michael et al., 2011) in their study show that poverty produces such high rates of fistula. Lack of money and access to proper nutrition, as well as vulnerability to diseases that exist in impoverished areas because of limited basic health care and disease prevention

methods cause inhabitants of these regions to experience stunted growth, this weak and underdeveloped bone structure increases the chances that the baby will get stuck in the pelvis during birth, cutting off circulation and leading to tissue necrosis.

Furthermore, poverty hinders women from being able to access normal and emergency obstetric care because of long distances and expensive procedures. For some women, the closest maternal care facility can be more than 50 kilometers away. In Kenya, a study by the Ministry of Health found that the "rugged landscape, long distances to health facilities, and societal preferences for delivery with a traditional birth attendant contributed to delays in accessing necessary obstetric care, (Hamlin, Muleta & Kennedy, 2013).

Similarly, In Tanzania cost of health care is found to be one of the factors leading to fistulas. Emergency cesarean sections which can help avoid fistulas caused by prolonged vaginal deliveries are very expensive, the average cost of an emergency cesarean section is 135 USD, while the average annual income there is only 115 USD which most women may not afford, (Muhindo, 2014).

In relation to the above, vesco-vaginal fistulas are more likely to occur among women in rural areas than those in urban areas. For instance in Malawi, about 65% of obstetrical fistulas occurred among rural women and this perhaps was a result of failure to access modern health care services since they live under high poverty line, (Tahzib, 2015).

Furthermore, young and poor women living in rural areas are particularly at risk of various health challenges including vesco-vaginal fistula. Because of their low social-economic status in many communities, women often lack the power to choose when to start bearing children or where to give birth. This in turn increases their risk to VVF, (Semere & Nour, 2014).

2.4 Measures to prevent obstetric fistulas

According to Donnay & Ramsey, (2012), Prevention of prolonged obstructed labor and fistula should preferably begin as early as possible in each woman's life. For example, improved nutrition and outreach programs to raise awareness about the nutritional needs of children to prevent malnutrition as well as improve the physical maturity of young mothers are important fistula prevention strategies.

Furthermore, Kadiatou, (2013) in his study shows that there is urgent need to build the capacity of primary level health care to conduct emergency obstetrics care and also to improve referrals

between health facilities, this helps to ease management of obstructed labour which is the leading cause of fistulas.

Anderson, (2014) indicated that it is also important to ensure access to timely and safe delivery during childbirth. These measures include availability and provision of emergency obstetric care as well as quick and safe cesarean sections for women in obstructed labour. This will help to avert the horrifying fistula tragedy.

In addition, Miller, Lester & Webster, (2013) in their study show that there is need to train health personnel on fistula prevention. Some organizations train local nurses and midwives to perform emergency cesarean sections to avoid vaginal delivery for young mothers who have under-developed pelvises. This helps to reduce delays which would be caused by referrals to other facilities for proper management.

Studies by the Uganda Women Health Network (UWHN) and Mifumi, (2017) recommended taking measures to prevent the practice of early marriages which is very common in many rural districts as one way of preventing Vesco vaginal fistulas. Setting up tough laws and providing education opportunities for the girl child are some of the measures which should be undertaken.

According to UNPFA, (2010), Promoting education for girls is also a key factor to preventing fistulae in the long term was also shown as a major means to prevent obstetric fistulas. This is due to the fact that education prolongs the time with which a girl gets married thus no early marriage and child birth which always puts young mothers at the risk of getting fistulas.

Brodman Michael; et al. (2011) in his study in Mount Sinai showed that Non-Government Organizations (NGOs) should also work with local governments, like the government to offer free cesarean sections. This enables to minimize the cases of obstetric fistulas that result from obstructed labour and young maternal age since even poor women are able to receive adequate care during labour.

UNFPA, (2012) indicates that fistula prevention also involves many strategies to educate local communities about the cultural, social, and physiological factors of that condition and contribute to the risk for fistulae. One of these strategies involves organizing community-level awareness campaigns to educate women about prevention methods such as proper hygiene and care during pregnancy and labor.

Furthermore, UNFPA, (2017) states that, “Ensuring skilled birth attendance at all births and providing emergency obstetric care for all women who develop complications during delivery would make fistula as rare in developing countries as it is in the industrialized world.”

According to Jared Omolo, (2013) in his study in Kenya, increasing awareness on the importance of timely health facility delivery and dangers signs in pregnancy among pregnant mothers and the community is important in reducing this delay.

CHAPTER THREE: METHODS AND MATERIALS

3.1 Introduction

The chapter presented the research methodology that was used in the study. This included study design and rationale, study setting and rationale, study population, sample size determination, sampling procedure, inclusion criteria, definition of variables, research instruments, data collection procedure, description of data analysis and management, ethical consideration, study limitation and dissemination of results.

3.2 Study design and rationale.

This was a cross sectional descriptive study employing both quantitative methods of data collection. The study design was selected because it is easy for data collection.

3.3 Study setting and rationale

The study was carried out at Jinja Regional Referral Hospital also known as Jinja hospital which is a general and teaching hospital located in the south eastern region of the country in the city of Jinja, Jinja municipal council near the source of the Nile along Nalufenya road about 87km east of Kampala, it's co-ordinates are 00252N, 331218E (latitude: 04310, and longitude: 33.2050 overview). The hospital has a bed capacity of approximately 600 beds; the hospital serves the community around Jinja district and districts within Busoga and part of Buganda region. Jinja Hospital is also one of the thirteen (13) Regional Referral Hospitals in Uganda. It is also one of the fifteen (15) hospitals designated as Internship Hospitals, where graduates of Ugandan medical schools may undergo a year of internship under the supervision of consultants and specialists in the designated medical and surgical disciplines. Among the services provided include majorly outpatient department where patients are examined for many medical ailments including Obstetric fistulas, the Hospital has a number wards which include the postnatal, Obstetrical and gyneacological wards among others where fistula patients are diagnosed and managed or treated, the hospital gets obstetric fistula surgical camps almost monthly where a number of fistula surgeons from various parts of the country converge to manage the cases. The study setting was been chosen because of a high number of obstetrical fistula clients registered annually.

3.4 Study population

The study was carried out among women of child bearing age attending JRRH, Jinja district. Emphasis were put on women attending postnatal clinic

3.4.1 Sample size determination

Thirty (30) women of reproductive age were selected and interviewed during the study. A small number of respondents were chosen for easy data collection. However, it was also the minimum number as per research guidelines 2009.

3.4.2 Procedure / sampling technique

Fisher et al formula was used to determine sample size.

Therefore $n= Z^2pq/d^2$ where **n** is the derived size of the population.

Z is the standard deviation at 95% of the degree of confidence which is 1.96

p is the estimated proportion of target population (25% of the mothers)

q is 1-p which gives the remaining population

d is the desired accuracy level (Precision standard error = 0.05)

z =95% = 1.96 **p**= 25% (0.25) **q**=1-0.25=0.75 **d**=0.05 , n= $(1.96)^2$x 0.25 x 0.75 / $(0.05)^2$ = **384** since the population sample size is less than 1,000. I will use finite population correlational factor formula;$\boldsymbol{n = \frac{n}{(1+n)/N}}$ where **N**=estimated sample size which is equal to 30

$n = \frac{n}{(1+n)/N}$ = 384/(385/30) = 29.9 approximetly = 30participants

3.4.3 Inclusion criteria

Only women of reproductive age attending Jinja Regional Referral Hospital who consented to the study were included in the study.

3.4.4 Exclusion Criteria

Women who did not consent to the study and those who were not in postnatal were excluded from the study

3.5 Definition of variables

Independent variables: These were be age, tribe, religion, qualification, marital status, and occupation and number of children for respondents.

Dependent variables: These included: Socio- related factors leading to obstetric fistula, socio-economic related factors leading to obstetric fistula and measures to prevent obstetric fistula among women of reproductive age at Jinja Regional Referral hospital, Jinja district.

3.6 Research Instruments

Pre- tested semi structured questionnaires was used to collect data. Pre-testing was done on five women of reproductive age at Mbale Regional Referral Hospital. Modifications were made before proceeding for data collection.

3.7 Data collection procedure

Before administering the questionnaires, the researcher fully explained the questions to the respondents. Interpretation was done for respondents who cannot read and write. Self-administered questionnaires were used to collect data. Each filled-in questionnaire was checked for accuracy and completeness by the researcher.

3.7.1 Data management

The data obtained was stored in note books, computer, and flash disk as a backup.

3.7.2 Data Analysis.

After collecting the data, it was manually analyzed through tallying and presented in frequency tables, figures and text.

3.8 Ethical consideration

The researcher will seek approval from IRC from Kampala International University teaching hospital through Faculty of Clinical Medicine and Dentistry who will then issue an Introduction letter to the researcher to the director Jinja RRH who will then introduce the researcher to the in-charge of obstetrics and gynaecology and then this will authorize him to collect data from the study area and will then introduce the researcher to the respondents. The researcher will ask for the consent of the respondents before interviewing them. By signing or putting on the consent form, the respondents will be assured for confidentiality of their responses and participation.

3.9 The study limitations

- Limited funds delayed the researcher from completing the study in time. The researcher mobilized for funds from relatives and well-wishers.

- Some respondents asked for money before answering questionnaires. The researcher convinced them that the work is for academic purposes only.

3.10Dissemination of results'

The study results were disseminated to the following categories of people/organizations: Kampala International University, Western Campus, Faculty of Clinical Medicine and Dentistry and the director JRRH

CHAPTER FOUR

4.0 RESULTS

This chapter presents data from analyzed questionnaires about factors contributing to obstetrical fistulas among mothers attending post natal clinic.

4.1 Socio cultural related factors leading to obstetrical fistulas

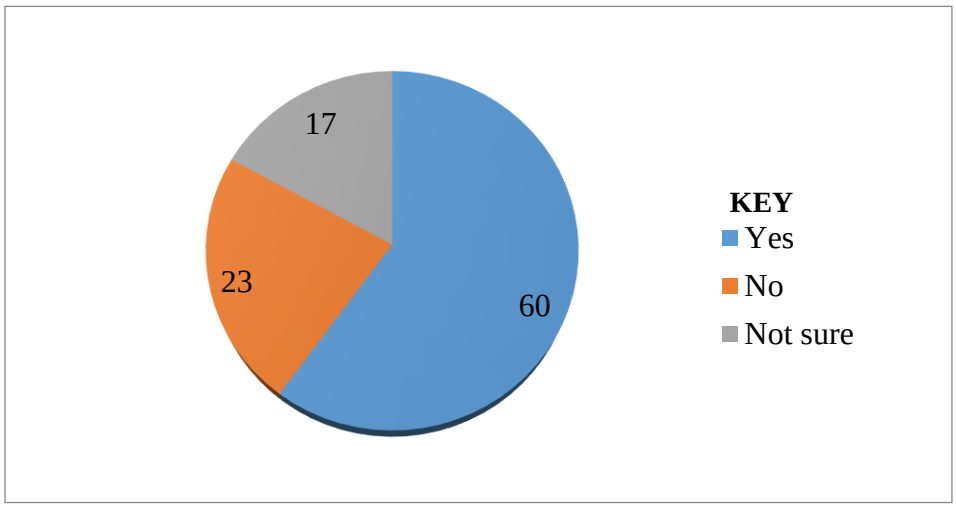


Figure 1: A pie chart showing whether respondents have nearby facility in their area

From figure 1 above, majority of the respondents 18/30(60%) reported having nearby health facility in their area**,** 7/30(23%) said they don't have and 5/30(17%) were not sure.

Table 1: A table showing respondents distance from nearby health facility

Responses	Frequency (f)	Percentage (%)
Less than 1km	05	16.7
2-3km	10	33.3
4 & above	15	50.0

Research findings in table 1 above shows that majority 15/30(50%) said their **distance from nearby health facility is** more than 4km, 10/30 (33.3%) of the respondents said 2-3km a minority 5/30(16.7%) of the respondents mentioned less than 1km.

Table 2: A table showing why respondents visit a health facility while pregnant

Responses	Frequency (f)	Percentages (%)
Why respondents visit the health facility while pregnant		
Advice from friend and health worker(n=30)	14	46.7
Knowledge of danger signs in pregnancy and labour (n=30)	05	16.7
To get assessed for any risk (n=30)	09	30.0
To avoid reliance for native medicine(n=30)	02	06.6
Total	**30**	**100**

From the table 1 above, majority of respondents 14/30 (46.7%) said advice from friend and health worker makes them visit a health facility while pregnant, 9/30 (30.0%) said to get assessed for any risk, 5/30 (16.7%) knowledge of danger signs in pregnancy and labour and minority 2/30 (06.6%) said to avoid reliance for native medicine.

Text 1: Explaining why respondents delay to seek health care while pregnant (n=30)

Results in text 1 above shows that majority of respondents 13/30 (43.4%) of respondents said they delay to seek health care while pregnant due to presence of native medicine personnel, 4/30 (13.3%) reported lack of finances, 10/30 (33.3%) long distance to reach the facilities while minority of respondents 3/30 (10) said lack of skilled personal at health facilities.

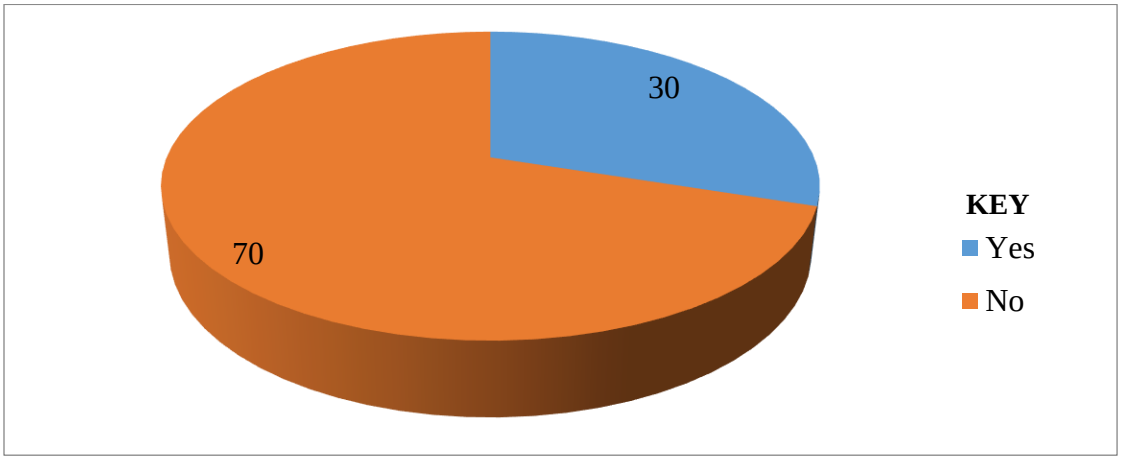


Figure 2: A pie chart showing whether respondents have ever seen a woman with a fistula

From figure 3, majority of respondents 21/30 (70%) have never seen a woman with a fistula while a lowest number 9/30 (30%) said Yes.

4.2 Socio-economic related causes of obstetrical fistula

Table 3: A table showing what respondents think can increase the risk of obstetric fistula

These may increase the risk of obstetric fistula.	Agree	Strongly agree	Disagree	Strongly disagree
a) Lack of access to skilled medical personnel (n=30)	60%	10%	20%	10%
b) Delay of mothers to decide to seek health care(n=30)	55%	30%	10%	5%
c) Unavailability of specialized personnel(n=30)	65%	25%	6%	4%
d) Lack of essential medical -surgical in health facility(n=30)	80%	15%	5%	0%
e) Failure to conduct a timely caesarian section(n=30)	40%	10%	35%	15%
f) Sexual abuse and rape(n=30)	10%	10.3%	50.7%	26%
g) Early marriage and early child birth(n=30)	70%	25%	5%	0%
h) Poorly performed abortions by inexperienced personnel(n=30)	70%	20%	7%	3%
i) Gender discrimination due to low female status(n=30)	43%	0%	50%	7%

j)	Malnutrition at any stage of development (n=30)	54%	26%	15%	5%

Results from table 2 shows that majority of respondents 21/30(70%) agreed that lack of access to skilled medical personnel may increase the risk of obstetric fistula while minority 9/30(30%) disagreed.

More than a half of the respondents 26/30(85%) agreed that delay of mothers to decide to seek health care may increase the risk of obstetric fistula while the lowest number 4/30(15%) disagreed. The overwhelming number of respondents 27/30(90%) agreed that unavailability of specialized personnel may increase the risk of obstetric fistula while the least 3/30(10%) disagreed. The greatest number of respondents 28/30(95%) agreed that lack of essential medical-surgical in health facility may increase the risk of obstetric fistula while the least 2/30(5%) disagreed. An equal number of respondents 15/30(50%) agreed and disagreed that failure to conduct a timely caesarian section may increase the risk of obstetric fistula.

More than half of the respondents 23/30(76.7%) disagreed that sexual abuse and rape may increase the risk of obstetric fistula while minority 7/30(23.3%) agreed.

The overwhelming number of respondents 28/30(95%) agreed that early marriage and early child birth may increase the risk of obstetric fistula while the lowest number 2/30(5%) disagreed.

The largest number of respondents 27/30(90%) agreed that poorly performed abortions by inexperienced personnel may increase the risk of obstetric fistula while the smallest number 3/30(10%) disagreed. More than a half of the respondents 17/30(57%) disagreed that gender discrimination due to low female status may increase the risk of obstetric fistula while 13/30(43%) agreed. More than a half of the respondents 24/30(80%) of the respondents agreed that malnutrition at any stage of development may increase the risk of obstetric fistula while 6/30(20%) of the respondents disagreed.

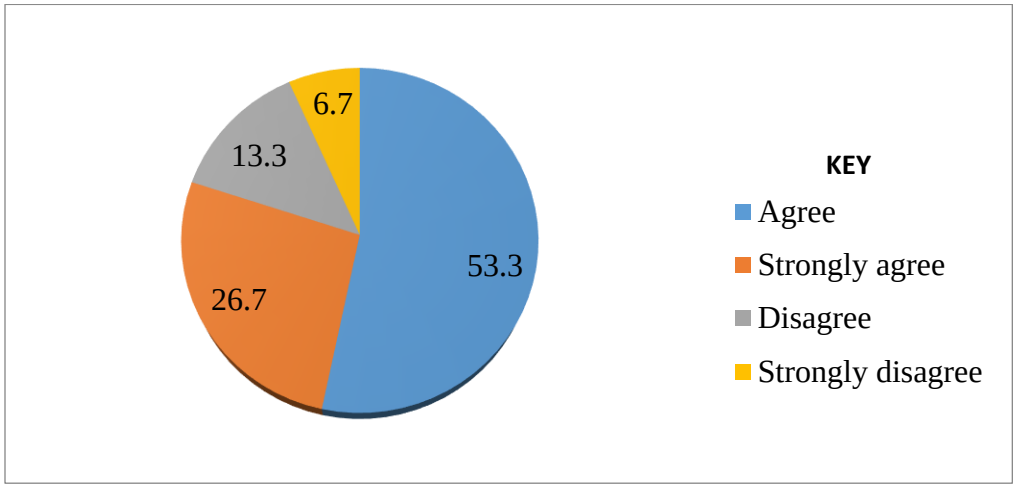


Figure 3: A pie chart showing respondents view on whether poorly developed bones of the pelvis can be a risk to obstruction

Figure 4 above shows that a majority of respondents 16/30 (53.3%) agreed that poorly developed bones of the pelvis can be a risk of obstruction. About 8/30 (26.7%) strongly agreed, 4/30 (13.3%) disagreed while minority 2/30 (6.7%) strongly disagreed.

Table 4: Table showing responses on what can lead to obstruction

The risk of obstruction may include	**Agree**	**Strongly agree**	**Disagree**	**Strongly disagree**
a) Poorly developed bone structure and stunted growth(n=30)	50%	20%	25%	5%
b) Poorly monitored labour(n=30)	75%	10%	9%	6%
c) Lack of emergency obstetric care(n=30)	60%	16.7%	23.3%	0%
d) Costly caesarian section(n=30)	80%	13.3%	6.7%	0%

Results from table 4 above shows that majority of respondents 21/30(70%) agreed that poorly developed bone structure and stunted growth can lead to obstruction while a minority 9/30(30%) disagreed. The overwhelming number of respondents 26/30(85%) agreed that poorly monitored labour can lead to obstruction while the lowest number 4/30(15%) disagreed.

More than a half of the respondents 23/30 (76.7%) agreed that lack of emergency obstetric care can lead to obstruction while the lowest number 7/30(23.3%) disagreed. Majority of the respondents 28/30(93.3%) agreed that costly caesarian section can lead to obstruction while a minority 2/30 (6.7%) disagreed. Results in text 2 shows that majority of the respondents 18/30 (60%) agreed that being a rural dweller where modern health care services are limited can be a risk to obstruction while a minority 12/30 (40%) disagreed.

4.3 Measures that can be undertaken to prevent obstetrical fistulas

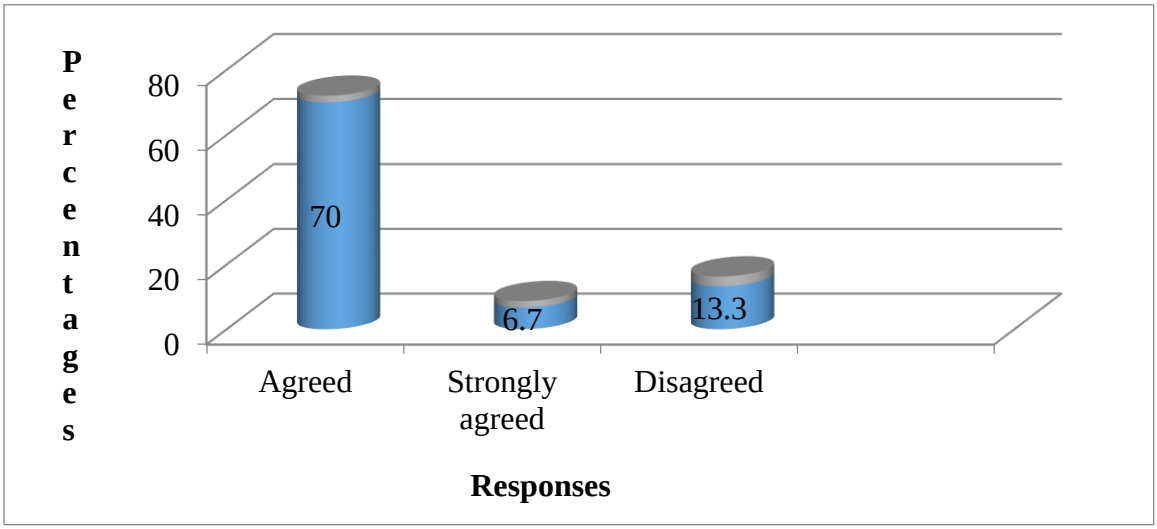


Figure 4: A graph showing relationship between good nutrition and obstetric fistula

According to figure 5 above, more than a half of the respondents 21/30 (70%) agreed that good nutrition for young females can prevent obstetric fistulas**,** 5/30 (16.7%) strongly agreed and a small number of respondents 4/30 (13.3%) disagreed.

Table 5: Table showing fistula prevention strategies in JRRH

Prevention of obstetrical fistulas in women may include the following	**Agree**	**Strongly agree**	**Disagree**	**Strongly disagree**
Increased capacity of health worker on provision of emergency obstetric care. (n=30)	60%	20%	15%	5%
Capacity of referral (n=30)	50%	10%	30%	10%

Availability of emergency obstetrical care (n=30)	70%	16.7%	10%	3%
Availability emergency caesarian section (n=30)	50%	30%	15%	5%
Discouraging early marriages(n=30)	70%	15%	10%	5%
Creation of tough laws against early marriages(n=30)	65%	25%	10%	0%
Encouraging girl child education(n=30)	73%	20.3%	6.7%	0%
Availability for emergency caesarian section in all primary health care service areas (n=30)	50%	30%	15%	5%

According to research findings from table 5 above, majority of respondents 24/30(80%) agreed that increased capacity of health worker on provision of emergency obstetric care can reduce obstetric fistulas while minority 6/30(20%) disagreed. More than a half of the respondents 18/30(60%) agreed that capacity of referral can reduce obstetric fistulas while 12/30(40%) disagreed. The highest number of the respondents 26/30(86.7%) agreed that availability of emergency obstetrical care can reduce obstetric fistulas while the smallest number 4/30(13.3%) disagreed. Overwhelming number of respondents 24/30(80%) agreed that can reduce obstetric fistulas availability emergency caesarian section while a smallest number 6/30(20%) disagreed.

Majority of respondents 26/30(85%) agreed that discouraging early marriages can reduce obstetric fistulas while a minority 4/30(15%) disagreed. The greatest number of respondents 27/30(90%) agreed that creation of tough laws against early marriages while the smallest number 3/30(10%) disagreed. Majority of the respondents 28/30(93.3%) agreed that encouraging girl child education while a minority 2/30(6.7%) disagreed. More than a half of the respondents 24/30(80%) agreed that improving availability for emergency caesarian section in all primary health care service areas can reduce obstetric fistulas while the smallest number 6/30(20%) disagreed. According text 3 above, majority of the respondents 18/30 (60%) agreed that educating local community on bio-psychosocial factors on VVF can prevent its cause**,** 6/30(20%) strongly agreed, 6/30 (20%) disagreed.

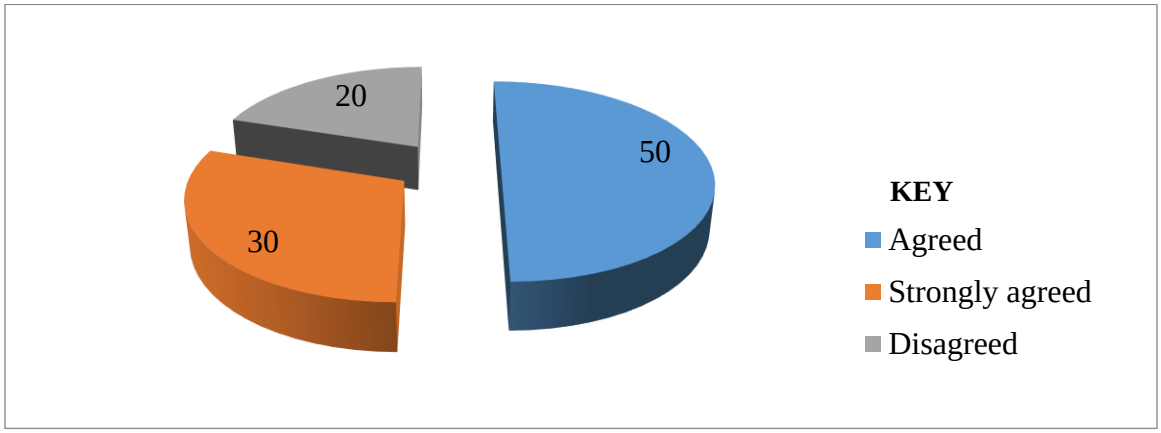


Figure 5: A pie chart showing whether hospital deliveries can prevent obstetric fistula

Research findings from figure 5 above showed a half of the respondents 15/30 (50%) agreed that promoting importance of hospital delivery can prevent obstetric fistulas**,** 9/30 (30%) strongly agreed, and the lowest number 6/30 (20%) disagreed.

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter discusses study findings and related literature review. It also presents the conclusion, recommendation and implications to nursing practice.

5.1 Discussion

5.1.1 Socio cultural related factors leading to obstetrical fistulas

Research findings shows that majority of the respondents 18/30(60%) reported to have nearby health facility in their area, 7/30(23%) said No and 5/30(17%) were not sure; this may be due to the fact that there are few health facilities in the rural areas that handle obstetric fistulas.

Furthermore, results from this study regarding respondent's distance from nearby health facility showed that a majority 15/30(50%) said more than 4km, 10/30 (33.3%) of the respondents said 2-3km a minority 5/30(16.7%) of the respondents mentioned 5km. Similarly Melah, (2009) in Nigeria indicated that taking more than two hours to reach a health facility was a significant risk factor for developing obstetric fistula. Findings show that distance of more than 3km from the women's homes to the health facilities is a risk factor for obstetric fistula. Transport problems and long distances have been identified as contributors to delay in reaching the health facilities.

Results showed that a majority of respondents 14/30 (46.7%) reported that they visit the health facility while pregnant due to advice from friend and health worker, 9/30 (30.0%) said to get assessed for any risk, 5/30 (16.7%) knowledge of danger signs in pregnancy and labour and a minority 2/30 (06.6%) said to avoid reliance for native medicine, this may be due to lack of sensitisation on the importance of hospital delivery.

Research findings indicated that majority of respondents 13/30 (43.4%) said they would delay to seek health care while pregnant due to presence of native medicine personnel, 4/30 (13.3%) reported lack of finances, 10/30 (33.3%) long distance to reach the facilities, and a minority of respondents 3/30 (10) said lack of skilled personal at health facilities. In relation to above, Wall (2012) in his study Zambia identified ignorance as one of the factors associated with obstetric fistulas. These causes delay to seek care due to inability of the couple to appreciate the danger signs in pregnancy and labour coupled by poor cultural beliefs; these pose a pregnant woman at a risk of native medicine use which may result into abnormally strong uterine contractions with poor cervical dilatation thus obstetric fistulas.

Results showed that more than a half of respondents 21/30 (70%) said they have never seen a woman with a fistula while a lowest number 7/30 (30%) said they have ever. This may be due to the fact that obstetric fistula is a silent horrifying condition that is known to the victims only.

5.1.2 Socio-economic related causes of obstetrical fistula

Research findings showed that majority of respondents 21/30(70%) agreed that lack of access to skilled medical personnel can increase the risk of obstetric fistula while a minority 9/30(30%) disagreed. This may be attributed to the fact that a few numbers of health workers in various health facilities receive trainings on obstetric fistulas.

Results showed that more than a half of the respondents 26/30(85%) agreed that delay of mothers to decide to seek health care can increase the risk of obstetric fistula while 4/30(15%) the lowest number disagreed. This may be attributed to the fact that most community members and couples fail to appreciate the dangers and labour due to illiteracy thus delay to seek adequate obstetric care and furthermore, on unavailability of specialized health personnel the overwhelming number of respondents 27/30(90%) agreed while 3/30(10%) disagreed. Similarly, (Fronczak et al., 2013) in their study reported lack of access to good quality obstetric care including skilled birth attendance during labor and delivery as one of the most important underlying causes of obstetrical fistula, access to health care might be due to delay in deciding to seek care, delay in reaching the health facility as well as delay in receiving sufficient care from the health facility.

Research findings showed that the greatest number of respondents 28/30(95%) agreed that lack of essential medical -surgical supplies in health facility can increase the risk of obstetric fistula while 2/30(5%) disagreed. This is attributed to the fact that clients are often sent out to purchase medical-surgical supplies from private facilities due to its shortages in the government facilities.

Furthermore, an equal number of respondents 15/30(50%) agreed and disagreed that failure to conduct a timely caesarian section can increase the risk of obstetric fistula. In the contrary, Katie Toon, (2017) in her study reported low quality caesarean section to be one of the causes of fistulas. The hospital might have a shortage of essential medical supplies and surgical equipment, or even electricity and running water. Some staff could lack skills and might not assess the need for a C-section in time or at all. Even if an operation is carried out, it could be the cause of the problem itself.

Results showed that more than half of the respondents 23/30(76.7%) disagreed while a minority 7/30(23.3%) agreed that sexual abuse and rape can increase the risk of obstetric fistula. In the contrary, a study by Requejo, (2013) also reveals that sexual abuse and rape which happens especially in conflict/post-conflict areas as potential causes for Vesco vaginal fistulas. This occurs when the person abused is of young age with under developed genitals with the abuser being with well-developed muscular genitals.

Furthermore, the overwhelming number of respondents 28/30(95%) agreed that early marriage and early child birth can increase the risk of obstetric fistula while the lowest number 2/30(5%) disagreed. In relation to the above Genadry (2013) in his study indicated early marriages and child birth as precipitating factors to obstetrical fistulas. Young mothers who are poor and malnourished may have under-developed pelvises which may lead to obstructed labour. In fact, obstructed labor is responsible for 76% to 97% of Vesco vagina fistulae, (Genadry, 2013).

Study findings showed that, the largest number of respondents 27/30(90%) agreed that poorly performed abortions by inexperienced personnel can increase the risk of obstetric fistula while the smallest number 3/30(10%) disagreed. This may be due to high levels of illiteracy. Similarly, Singer, (2016) carried out a study to determine the increasing cases of Vesco vaginal fistulas in three rural districts of Zimbabwe and findings established that about 20% of cases reported among women were as a result of poorly performed abortions by non-trained health personnel. This may result in to perforation of the genital tract leading to VVF.

In addition, more than a half of the respondents 17/30(57%) disagreed that gender discrimination due to low female status can increase the risk of obstetric fistula while 13/30(43%) agreed. This is supported by (Ijaiya & Aboyeji, 2016) in their study where they identified gender discrimination as a leading cause of obstetrical fistula. Because of low status in many communities, women are often lacking decision making and the existence of this problem is a major determinant in the health seeking behaviour of women. For example if labor becomes obstructed and all local methods fail, a woman might only be taken to the hospital only if consent is given by her husband or the in-laws.

Regarding malnutrition at any stage of development can increase the risk of obstetric fistula, a majority of the respondents 24/30(80%) agreed while 6/30(20%) of the respondents disagreed. Similarly, a study by Chibika, (2013) carried out in three rural villages of Lusaka Zambia identified malnutrition as a major factor contributing to Vesco vaginal fistula among women. This is mainly

due to the fact that malnutrition also leads to poor bone development and orthopedic disorders that can contribute to complications during childbirth.

Similarly, results showed that majority of respondents 16/30 (53.3%) agreed that whether respondents think poorly developed bones of the pelvis can be a risk to obstruction, 8/30 (26.7%) strongly agree, 4/30 (13.3%) disagree, 2/30 (6.7%) strongly disagree.

Study findings showed that a majority of respondents 21/30(70%) agreed that poorly developed bone structure due stunted growth can increase the risk of obstetric fistula while a minority 9/30(30%) disagreed. In relation to the above Hilton & Ward, (2014) in their study reported that poor nutrition produces such high rates of fistula cases. Lack of access to proper nutrition causes stunted growth, this stunted growth causes expecting mothers to have pelvic bones unequipped for proper birth, this weak and underdeveloped bone structure increases the chances that the baby will get stuck in the pelvis during birth, cutting off circulation and leading to a rotting away of tissue.

According to study results, the overwhelming number of respondents 26/30(85%) agreed that poorly monitored labour can increase the risk of obstetric fistula while the lowest number 4/30(15%) disagreed. This could be due to the fact that a midwife sometimes becomes overwhelmed with the number of patients in labour in that she fails to adequately monitor all the mothers using the required labour monitoring tools.

Furthermore, more than a half of the respondents 23/30(76.7%) agreed that lack of emergency obstetric care can increase the risk of obstetric fistula while the lowest number 7/30(23.3%) disagreed. This is attributed to the fact that pregnant mothers in labour take long time waiting to access the so called obstetric care due to understaffing or lack of medical-surgical supplies.

In addition, majority of the respondents 28/30(93.3%) agreed that costly caesarian section can increase the risk of obstetric fistula while a minority 2/30(6.7%) disagreed. This could be due to the fact that many house live below the poverty line. Similarly, in Tanzania cost of health care is found to be one of the factors leading to fistulas. Emergency cesarean sections which can help avoid fistulas caused by prolonged vaginal deliveries are very expensive, the average cost of an emergency cesarean section is 135 USD, while the average annual income there is only 115 USD which most women may not afford, (Muhindo, 2014).

Furthermore, majority of the respondents 18/30 (60%) agreed that being a rural dweller where modern health care services are limited can be a risk to obstruction while minority 12/30 (40%)

disagreed. This is supported by Tahzib, (2015) in Malawi where he identified that about 65% of obstetrical fistulas occurred among rural women and this perhaps was a result of failure to access modern health care services since they live under high poverty line.

5.1.3 Measures that can be undertaken to prevent obstetrical fistulas

Research findings showed that more than a half of the respondents 21/30 (70%) agreed good nutrition for young females can prevent obstetric fistulas, 5/30 (16.7%) strongly agree and a small number of respondents 4/30 (13.3%) disagree. This is attributed to the fact that good nutrition improves the borne development in young girls. Similarly, Donnay & Ramsey, (2012) in their study shows that prevention of prolonged obstructed labor and fistula should preferably begin as early as possible in each woman's life. For example, improved nutrition and outreach programs to raise awareness about the nutritional needs of children to prevent malnutrition as well as improve the physical maturity of young mothers are important fistula prevention strategies.

According to research findings regarding prevention of obstetrical fistulas in women; a majority of respondents 24/30(80%) agreed that increased capacity of health worker on provision of emergency obstetric care can reduce obstetric fistulas while a minority 6/30(20%) disagreed and on capacity of referral, more than a half of the respondents 18/30(60%) agreed while 12/30(40%) disagreed. This is supported by Kadiatou, (2013) in his study that shows that there is urgent need to build the capacity of primary level health care to conduct emergency obstetrics care and also to improve referrals between health facilities, this helps to ease management of obstructed labour which is the leading cause of fistulas.

Furthermore, the highest number of the respondents 26/30(86.7%) agreed that availability of emergency obstetrical care can help prevent obstetric fistulas while the smallest number 4/30(13.3%) (14%) disagreed and on availability emergency caesarian section, an overwhelming number of respondents 24/30(80%) agreed while a smallest number 6/30(20%) disagreed. In line with the above, Anderson, (2014) indicated that it is also important to ensure access to timely and safe delivery during childbirth. These measures include availability and provision of emergency obstetric care as well as quick and safe cesarean sections for women in obstructed labour. This will help to avert the horrifying fistula tragedy.

In addition, majority of respondents 26/30(85%) agreed that discouraging early marriages can help prevent obstetric fistulas while minority 4/30(15%) disagreed and the greatest number of respondents 27/30(90%) agreed that creation of tough laws against early marriages can also help

prevent obstetric fistulas while the smallest number 3/30(10%) disagreed. In relation to the above, studies by the Uganda Women Health Network and Mifumi (2017) recommended taking measures to prevent the practice of early marriages which is very common in many rural districts as one way of preventing Vesco vaginal fistulas, setting up tough laws and providing education opportunities for the girl child are some of the measures which should be undertaken.

Results showed that majority of the respondents 28/30(93.3%) agreed that encouraging girl child education can help prevent obstetric fistulas while a minority 2/30(6.7%) disagreed. Similarly, UNPFA (2010) in its study stresses on promoting education for girls as a key factor to preventing fistulae in the long term was also shown as a major means to prevent obstetric fistulas. This is due to the fact that education prolongs the time with which a girl gets married thus no early marriage and child birth which always puts young mothers at the risk of getting fistulas.

Furthermore, more than a half of the respondents 24/30(80%) agreed that improving availability for emergency caesarian section in all primary health care service areas can help prevent obstetric fistulas while the smallest number 6/30(20%) disagreed. In line with the above (Brodman Michael; et al., 2011) in his study in Mount Sinai showed that NGOs should also work with local governments, like the government to offer free cesarean sections. This enables to minimize the cases of obstetric fistulas that result from obstructed labour and young maternal age since even poor women are able to receive adequate care during labour

In addition, results showed that a majority of the respondents 18/30 (60%) agreed that whether educating local communities on bio-psychosocial factors on VVF can prevent its cause, 6/30(20%) strongly agreed, 6/30(20%) disagreed. This is in agreement with UNFPA (2012) which indicates that fistula prevention also involves many strategies to educate local communities about the cultural, social, and physiological factors of that condition and contribute to the risk for fistulae. One of these strategies involves organizing community-level awareness campaigns to educate women about prevention methods such as proper hygiene and care during pregnancy and labor.

Research findings showed that a half of the respondents 15/30(50%) agreed that promoting importance of hospital delivery can prevent obstetric fistulas, 9/30(30%) strongly agreed, and the lowest number 6/30(20%) disagreed. Similarly, Jared (2013) in his study in Kenya suggests increasing awareness on the importance of timely health facility delivery and dangers signs in pregnancy among pregnant mothers and the community as important in reducing this delay.

5.2 Conclusions

On Socio cultural related factors leading to obstetrical fistulas, majority of respondents visit the health facility while pregnant due to advice from friends, respondents said they do not have nearby health facility in their area, they also agreed on early marriage, early child birth and presence of native medicine personnel as risk factors to obstetric fistulas.

On Socio-economic related causes of obstetrical fistula, respondents agreed that costly caesarian section, malnutrition at any stage of development and being a rural dweller where modern health care services are limited as risk factors to obstruction.

Results on measures to prevent obstetric fistulas, respondents agreed that creation of tough laws against early marriages, ensuring availability of emergency obstetrical care, promoting importance of hospital delivery as a major means of combating obstetric fistulas.

5.3 Recommendations

1. The Government should ensure dissemination of maternity services to rural communities, availability of adequate medical-surgical supplies and recruitment of trained health workers in order to ensure efficient provision of quality emergency obstetric care.
2. Other researchers should put emphasis on the knowledge, attitude and practice of health workers towards obstetric fistula management.
3. Hospital administrators should ensure that health workers are provided with continuous medical education to empower them on prevention, treatment and its management.
4. Community members should discourage early marriages and child birth.

REFERENCES

Ampofo, K.Uchebo, G. (2014), *Epidemiology of vesico-vaginal fi stulas in northern Nigeria*. W Afric J Med 9: 98–102.

Anderson, F.W. (2014), *Obstetric fistula in low-income countries,* International Journal of Gynecology & Obstetrics, 104(2), 85- 89.

Barageine JK (2014), http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0112299

Brodman Michael et al., (2011). "Obstetric Fistula In Low And Middle Income Countries*"*. *Mount Sinai Journal of Medicine*. 78 (3): 352–361

Brodman Michael; et al., (2011), "Obstetric Fistula In Low And Middle Income Countries". *Mount Sinai Journal of Medicine*. 78 (3): 352–361

*Creanga, A.A.; R.R. Genadry (2016), "*Obstetric fistulas: A clinical review*". International Journal of Gynecology & Obstetrics, 99 (Supplement 1): S42.*

Donnay, K. Ramsey, (2012). *Eliminating obstetric fistula: Progress in partnerships, International Journal of Gynecology & Obstetrics*, Volume 94, Issue 3, September Pages 254-261,

Fronczak N, Antelman G, Moran AC, Caulfield LE, Baqui AH (2013), *Delivery-related complications and early postpartum morbidity in Dhaka,* Bangladesh. Int J of Gynecology & Obstetrics.;13 (3):271–278.

Genadry (2013),"Obstetric fistulas: A clinical review". *International Journal of Gynecology & Obstetrics* 99 (Supplement 1): S42.

Hamlin EC, Muleta M, Kennedy RC. (2013), *Why obstetric fistula are on the increase*. BMJ.89 (suppl 1): 50–53.

Hancock B, Browning A (2009), *A text book of practical obstetric fistula surgery*. London: Royal Society of Medicine Press Ltd.

Hilton P, Ward A (2014). *Epidemiological and surgical aspects of urogenital fistulae*: a review of 25 years' experience in southeast Nigeria. Int Urogynecol J Pelvic Floor Dysfunct.;13 (4):189–194.

Hilton P. (2013), *Vesico-vaginal fistulas in developing countries*. Int J Gynecol Obstet 82:285—95

Holme A, Breen M, MacArthur C (2017), *Obstetric fistulae: a study of women managed at the Monze Mission Hospital, Zambia.* BJOG;13(8):1010–1017.

Holme A, Breen M, MacArthur C.(2013), Obstetric fistulae: *a study of women managed at the Monze Mission Hospital, Zambia*. BJOG.;114:1010–1017.

Ijaiya MA, Aboyeji PA (2016), *Obstetric urogenital fistula: the Ilorin experience Nigeria*. West Afr J Med.;13(1):7–9.

Jared Omolo (2013), *Factors associated with obstetric fistulae occurrence among patients attending selected hospitals in Kenya*, 2010: a case control study

Kadiatou K. (2014), *Prevention of obstetric fistula and support to women identified in Se´gou, Mali,* Proceedings of the meeting making motherhood safer by addressing obstetric fistula. Johannesburg, South Africa, 23—26 October; www.fistulafoundation.org/financials/grantees/

Kalilani-LV, Umar E, Lazaro D, Lunguzi J, Chilungo A (2013), Prevalence of obstetric fistula in Malawi. Int J Gynaecol Obstet.;13(3):204–208.

Karateke A, Cam C, Ozdemir A, Guney B, Vatansever D, Celik C (2015), *Characteristics of obstetric fistulas and the need for a prognostic classification system*. Archives of Med Sci;13(2):253–256.

Katie Toon (2017), https://www.opfistula.org/causes-of-obstetric-fistula/

Maryanne Waweru-Wanyama (2014), Fistula in Kenya: The Facts and The Needed Approaches https://www.flyingdoctorsafrica.org/2014/08/fistula-in-kenya-facts-and-needed-approaches/

Melah GS, Massa AA, Yahaya UR, Bukar M, Kizaya DD, El-Nafaty AU (2009), *Risk factors for obstetric fistulae in north-eastern Nigeria. J Obstet Gynaecol*. 2009 Nov; 27(8):819-23

Miller J, Lester F, Webster M, et al. (2015*), "Obstetric fistula: a preventable tragedy". J Midwifery Womens Health. 50: 286–294.*

Requejo (2013), "*Restoring Dignity: Social Reintegration After Obstetric Fistula Repair In Ukerewe, Tanzania*". Global Public Health 6.8 (2011): 859-873.

Roenneburg ML, Genadry R, Wheeless CR, (2015, *Repair of obstetric vesicovaginal fistulas in Africa*. Am J Obstet Gynecol. 195:1748–1752.

Roka ZG, Akech M, Wanzala P, Omolo J, Gitta S, Waiswa P (2013), *Factors associated with obstetric fistulae occurrence among patients attending selected hospitals in Kenya*, 2010: a case control study.BMC Pregnancy Childbirth. 2013 Feb 28; 13():56.

Roush, K. M. (2014), *Social implications of obstetric fistula*: An integrative review, Journal of Midwifery and Women's Health, 54(2), e21-33.

Semere, L. & Nour, N.M. (2014), Obstetric fistula: *Living with incontinence and shame. Reviews in Obstetrics & Gynecology*, 1(4), 193-197.

Singer J, (2016). *Childbirth experiences of women with obstetric* .BMJ; 22: 91–98.

Stanton C, Holtz SA, Ahmed S (2014), *Challenges in measuring obstetric fistula*. Int J Gynaecol Obstet.;13(Suppl 1):S4–S9.

Tahzib, F. (2015), *Epidemiological determinants of vesico-vaginal fistulas*, Brit J Obstet Gynecol 90: 387–391

The World Health Organization (WHO, 2014), *Statistics of women affected with Vesco vagina fistulas across the world,* Retrived from www.who.org in May 2015

UBOS (2012), ICF International Inc (2012), *Uganda Demographic and Health Survey, Kampala, Uganda*: UBOS and Calverton, Maryland: ICF International Inc.

UNFPA (2012), "*A Tragic Failure to Deliver Maternal Care*"

UNFPA (2017) - "Obstetric fistula" *United Nations Population Fund,* 8 May 2017, Retrieved 12 December 2017.

UNFPA (2017), "Obstetric fistula" UNFPA - United Nations Population Fund, 8 May 2017 Retrieved 12 December 2017

UNPF (2010), United Nations Population Fund, Campaign to End Fistula, *The Maternal Health Thematic Fund Annual Report 2010: Campaign to End Fistula*. http://www. endfistula.org/publications.htm, Accessed November 2012

Wall LL (2012), Overcoming phase 1 delays: *the critical component of obstetric fistula prevention programs in resource-poor countries,* BMC Pregnancy Childbirth. 2012 Jul 18; 12():68.

Wall LL, Karshima JA, Kirschner C, Arrowsmith SD (2015). *The obstetric vesicovaginal fistula*: characteristics of 899 patients from Jos, Nigeria. Am J Obstet Gynecol.;13(4):1011–1019.

Walraven G, Scherf C, West B, Ekpo G, Paine K, Coleman R, Bailey R, Morison L (2015), *The burden of reproductive-organ disease in rural women in The Gambia West Africa*. Lancet.;13 (9263):1161–1167.

WHO (2018), http://www.who.int/features/factfiles/obstetric_fistula/en/

APPENDIX I: STATEMENT OF CONSENT

I, the undersigned, acknowledge that the researcher has fully explained to me the nature, purpose and procedure involved in the study. I appreciate that my participation is completely voluntary and that my refusal or withdrawal from this study will not in any way affect me.

I therefore, sign here as a proof of my consent to participate in the study.

Signature: ……..…….

Date: ……

I have explained to the best of my knowledge the purpose of this study to the participant and his / her consent has been without force.

Name: ……...…….

Signature ……...……

Date: ……

APPENDIX II: QUESTIONNAIRE

I am ***Abdi Shakur Sheikh Mohamud*** a student of Kampala International University, western Campus and am carrying out a study on factors contributing to obstetrical fistulas among mothers attending post natal clinic at Jinja Regional Referral Hospital.

You are kindly requested to assist in answering the questions below.

The information will be used for academic work only and will be treated with strict confidentiality.

Section A: Socio cultural related factors leading to obstetrical fistulas

Tick the correct answer from the alternatives and explain where necessary.

1. Is there a healthy facility in your area of stay?
   a) Yes
   b) No
   c) Not sure
   d) Others (specify)? ……..
2. How long do you travel to access a healthy facility for consultations?
   a) <1km
   b) 2-3km
   c) >4km
   d) Others(specify)
3. What makes you visit a health facility while pregnant?
   a) Advice from friend and health worker.
   b) Knowledge of danger signs in pregnancy and labour.
   c) To get assessed for any risks
   d) To avoid reliance on native medicine
4. What would make you delay to seek health care while you are pregnant?
   a) Presence of native medicine personnel
   b) Long distance to reach the facilities
   c) Lack of skilled personal at health facilities
   d) Others (specify)
5. Have you ever seen a woman with a fistula?
   a) Yes
   b) No.

Section B: Socio-economic related causes of obstetrical fistula

For the table below please tick if you agree, strongly agree, disagree or strongly disagree

These may increase the risk of obstetric fistula.	**Agree**	**Strongly agree**	**Disagree**	**Strongly disagree**
k) Lack of access to skilled medical personnel				
l) Delay of mothers to decide to seek health care.				
m) Unavailability of specialized personnel.				
n) Lack of essential medical -surgical in health facility.				
o) Failure to conduct a timely caesarian section.				
p) Sexual abuse and rape.				
q) Early marriage and early child birth				
r) Poorly performed abortions by inexperienced personnel.				
s) Gender discrimination due to low female status.				
t) Malnutrition at any stage of development.				

Risk of obstruction

For the table below please tick if you agree, strongly agree, disagree or strongly disagree

Risk of obstruction include	**Agree**	**Strongly agree**	**Disagree**	**Strongly disagree**
e) Poorly developed bones of the pelvis				
f) Poorly developed bone structure and stunted growth.				
g) Poorly monitored labour				

h) Lack of emergency obstetric care				
i) Costly caesarian section				
j) Being a rural dweller where modern health care services are limited				

Section C: Measures to prevent obstetrical fistulas

Prevention of obstetrical fistulas in women may include the following	**Agree**	**Strongly agree**	**Disagree**	**Strongly disagree**
Good nutrition for young females				
Increased capacity of health worker on provision of emergency obstetric care.				
Capacity of referral				
Availability of emergency obstetrical care				
Availability emergency caesarian section				
Discouraging early marriages				
Creation of tough laws against early marriages				
Encourage girl child education				
Availability for emergency caesarian section in all primary health care service areas.				
Educating local communities on bio-psychosocial factors on VVF				
Promoting importance of hospital delivery				

Thanks for your participation

APPENDIX III: MAP OF JINJA DISTRICT SHOWING JINJA HOSPITAL

APPENDIX IV: MAP OF UGANDA SHOWING JINJA DISTRICT