

Birth Preparedness and Complication Readiness among Women Within Reproductive Age in Mukura Sub County in Ngora District Eastern Uganda

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Abstract

Ngora district had a total of 3,248 under-five deaths in 2015 (Reproductive maternal newborn and child health report (2015)). Ngora Fredica hospital registered 5 maternal deaths on September 6 and 11 in November in 2016. In total 22 maternal deaths in 3 months, 5 deaths are from Nora sub-county with high number of women with morbidity such as foot drop, ill health, maternal exhaustion, and fistulas. The purpose of the study was to assess factors that influence birth preparedness and complications readiness among community women of child-bearing age (15-49 years). Bivariate analysis with an unadjusted odds ratio at a 95% confidence level was performed to determine the factors that were associated with birth preparedness and complication readiness among women within reproductive age. Age (15-19 years COR = 1.68, p-value 0.000), Education level (no formal education COR = 6.1, p-value 0.000), Occupation (housewife not working COR = 4.58, p-value 0.000), Marital status (Single mothers COR = 2.60, p-value 0.000), Number of children (more than 6 children COR = 2.95, p-value 0.000), Distance to the health facility (Not walkable COR = 5.29, p-value 0.000), Cost of transport to the health facility (Not affordable COR = 4.91, p-value 0.010), Perceptions COR = 6.14, p-value 0.000, Knowledge (lack of knowledge on danger signs of birth complications COR = 3.19, p-value 0.000), Practice (not attending ANC COR = 2.95, p-value 0.000) and Practice (delivering from home COR = 3.80, p-value 0.006).

Keywords: *Birth preparedness, Birth Complication readiness, Reproductive age.*

Introduction

The increasing level of maternal mortality and morbidity, as well as neonatal mortality, remain a public health issue, especially in developing countries, including Uganda. Most of these death occurs within 24 hours of birth [1]. This chapter looked at information on the background of the study, problem statement, broad and specific objectives, research questions, justification, the background of the study area, and conceptual framework which assessed birth preparedness and complication readiness among community women of childbearing age (15-49) years at Mukura sub-county in Ngora district.

World health organization [2] defines maternal death as the death of women during pregnancy or within 42 days of termination of pregnancy, irrespective of duration and site of pregnancy, from any cause related to pregnancy.

Maternal death was also defined by Uganda [3] as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy. According to [4], birth preparedness and complication readiness were defined as planning for normal birth and finding possible actions to be taken in cases of emergencies which can lead to maternal and neonatal morbidity and mortality.

Besides medical and obstetric causes, according to the author, there are numerous interrelated socio-cultural factors that delay care-seeking and contribute to this death, and these care-seeking delay includes: knowing the complications, deciding to seek care identifying and reaching the health facility and receiving adequate and appropriate treatment according to [5].

According to [6], close to 15% of women attending Ridge Regional Hospital in Accra, Ghana, developed life-threatening complications hence the need for emergency obstetric care. The complications were unpredictable and may progress rapidly to a fatal outcome. Knowledge of danger signs of obstetric emergencies and rapid recognition with an appropriate response when emergencies occur may reduce delays in decision-making and reaching health facilities [7], and these causes of delays are common and unpredictable. [8], reported that, in order to address these, women and their families, as well as the communities and health facilities that surround them, must be prepared in advance and be very ready for rapid emergency action. Based on the above concept, one of the key roles of Antenatal care was to provide health education on dangerous signs of pregnancy and delivery, preparation of a birth plan, and to encourage delivery under a skilled attendant.

According to [9], they recommended that every pregnant woman should receive focused antenatal care in which Birth preparedness and complication readiness (BPCR) are key components.

Maternal and Neonatal Health Program [10] identified BPCR as a safe motherhood strategy whose objective is to promote the timely use of skilled maternal and neonatal care during childbirth or obstetric emergencies. It entails making plans prior to birth to ensure that a pregnant woman is prepared for normal birth and complications readiness. BPCR is a comprehensive package that aimed at promoting timely access to maternal and

neonatal services and determining the survival of a pregnant mother and her unborn child, as confirmed by [11].

Pregnant women usually face the risk of unpredictable complications, which lead to maternal and newborn death as well can cause disability to both the baby and mother. BPCR package includes registration of pregnancy, knowledge of danger signs, plan for where to give birth, plan for a skilled birth attendant, plan for transportation to the health facility in time, a birth companion, especially during labour, Male partner, and families involvement in the birth plan are critical if improvement in maternal health and reduction of morbidity and mortality is to be realized according to [12]. Evidence from different studies suggests that BPCR improves practices and knowledge of others about danger signs accessibility to health facilities and leads to improvement in care seeking during an obstetric emergency.

Continuous professional training of Midwives in the 20th century has led to a decline in maternal deaths in developed countries, and Although some packages of BPCR have been put in place , there are still limiting factors affecting accessing health care services in Uganda especially rural areas which includes: financial limitation, poor geographical accessibility of health facilities in terms of transport, location and Distance, inability to afford medical supplies that are often compulsory at some public health facilities inadequate skilled human resource, inadequate referral services, poor infrastructure even for primary health care and maternal health care services according to [13].

According to [14] maternal mortality remained a public challenge. About 830 women die from pregnancy or child-birth complication every day in the world, with 99% contributed by developing countries which is estimated to be 300 million women still in the developing world suffer from short term or long-term morbidities brought about by pregnancy and childbirth. Majority of the women suffered

from debilitating disability such as Fistula, emotional and psychological effects. [15] cited that for every woman who dies, 30-50 more women suffer childbirth related injuries, infections, or disease. Also confirmed by [16].

Maternal mortality rate was 216 deaths per 100,000 according to [17] globally, 550 per 100,000 live births in sub-Saharan Africa, this is contributing to 62% of maternal death in the world. In developed countries maternal mortality rate ranges between 5-25 death per 100,000 live birth according to MDG report for Uganda [18] and 180 per 100,000 in south Asia compared to only 5 in developed countries and Africa is among the 10th countries with high maternal mortality, ng to 62% of maternal death.

Uganda neonatal mortality rates of 29 death per 1000 live birth has remained constant over the last 15 years, [19] report, this number was higher though slightly lower than Tandahimba in Tanzania of 31 death per 1000 live birth in 2013 the pattern of these of these death are similar to the pattern for maternal deaths, the majority occurring in developing countries. These high level of neonatal, perinatal and maternal mortality remain major public health challenges in Uganda and the world over. About one third of neonatal death occur the patterns for maternal deaths; the majority occurring in developing countries. These high levels of neonatal, perinatal in the first day of life, and most of the maternal mortality remain major public health challenges in Uganda and the world over. About one third of neonatal deaths occur on the first day of life and most of the maternal death occur labour, delivery and within 24 hours postpartum [20].

These neonatal morbidity and mortality rates are treatable and preventable through several interventions which should be put in place according to [21]. Uganda's maternal is due to pregnancy related causes per 100,000 live birth. Major complications include severe bleeding, infection, unsafe abortion, unsafe abortion, anemia and obstructed labour and hypertensive disorders [22]

Epidemiological research indicates that the principal direct causes of mortality and morbidity in newborn (28 days) are; infection, complications of prematurity, asphyxia and birth defects according to [23].

Male partners, families and communities' involvement are critical if improvement in maternal and neonatal health and reduction in morbidity and mortality is to be realized. While strategies have been attempted to address the issues above, barriers contributing to maternal and neonatal health outcomes still exists as economic, social, physical and health system factors operating at the community, household, and individual level as well as within the larger socio-political environments and health care according to [24] and these factors are related to factors hindering birth preparedness and complication readiness at community level.

The Uganda's maternal ratio stands at 438 per 100,000 according to [25] which account for close to 2% of annual death globally, this translates into 16 deaths per day. at least 45,00 newborn children are reported to die yearly in Uganda with an equal number being still born, according to Uganda [26] report. Uganda is thought to have the fifth highest number of newborn deaths in sub-Saharan Africa. Its fertility rate stands at 6.7 children per woman, while in Hoima 7.0 children per woman slightly higher than the national levels. This implies that there is high fertility rate with possible birth complications. BPCR among women of child-bearing age are for health of the baby and the mother. These life-threatening complications are treatable thus most these deaths are avoidable if women with these risks for complications have timely access to appropriate obstetric care according to case study by [27] in Nakawa division, Kampala, Uganda.

To assess knowledge and practices with respect to birth preparedness and complications readiness among community women of child-bearing age (15-49 years) at Mukura Sub County in Ngora District.

Methodology

The study Design

A qualitative and quantitative study was conducted in Mukura Sub County in Ngora district from May to June 2019. The study inclusion criteria was community women within child-bearing age at Mukura sub county and only those who were willing to consent for participation in the study were allowed.

Using structured interview questionnaire, data was collected from 422 women on i) Socio-economic demographic variables like as age, education level, marital status, and employment status. ii) awareness of the pregnant women on birth BP/CR iii) awareness of pregnant women on maternal obstetric factors such as parity, previous pregnancy outcomes, attendance of ANC, gestation of first practices on BP/CR. and IV) and practices of women on BPCR.

Sources of Data

The sources of data was primarily obtained from women through structured interview guides, and survey of the mothers ANC cards.

Study Area

The study was done in Mukura Sub County located in Ngora district, which is about 220km East of the capital city Kampala.

Study Population

The target population was 422 female. The accessible population were those women within the reproductive age (15-49) residing in Mukura sub county. This sub-county has 5 parishes with their female populations according to HDLG (2014) Mukura 5,290, Akubui 12,485, Ajeluk 6,647, Adul 3,672, Morukakise 10,625. Five parishes share one government functional health center II, one PNF health center II and a health center III at Mukura parish. Oget health center a proposed H/CIV but still functional as H/C III due to lack

of water, operating theatre and anesthetist and others.

Sample Size Calculation

Sample size was calculated by formula as used by [28] In a context where the target population is more than 10,000 the formula is:

$$n = \frac{Z^2 pq}{d^2}$$

n= desired sample size

Z=standard normal deviate (1.96) that corresponds to 95% confidence level.

p= the proportion in the target population estimated to have a particular Characteristic (birth preparedness). A study done in rural Uganda on knowledge of obstetric danger signs and birth preparedness practices showed about 35% [29].

$$q=1.0-0.35=0.65.$$

d= the degree of accuracy desired (0.05 will be used in the current case).

$$n = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = 0.9604/0.0025 = 372.$$

$$n = (3.84)(0.5)(0.5)/0.0025.$$

$$n = 0.9/0.0025.$$

$$n=384 \text{ plus } 10\%=422.$$

This was done using a single population formula, putting in mind the confident level of 95%, 5% of the margin error, 50% estimation of the population of the women within bearing age (15-49), since the actual population of women preparing for birth was not known.

Multistage sapling was employed, the calculated sample and 10% contingency for non-respondent were added. After all, the final sample size became 422.

Sampling Procedure

The sample size was 422 calculated from the total population of women. Kigoroby sub county. The 5 parishes were written on pieces of papers of equal sizes and mix thoroughly, then 2 of the papers were picked at a time. The selected parishes were clustered by villages which were the smallest units with about 1000 people on average. Each parish has a total of

about 9 villages. Two villages was selected from each parish by simple random sampling which included Adul, Ajeluk, and Akeit villages. The sample size n= 422 was allocated to each villages under the study with equal total number of 106 women per village.

A common landmark was identified which was the LC1 chairman’s house. To get the starting point, a pen was pinned, and the direction pointed by the tip of the pen was followed. The first household, which was under the initial sampling interval of each villages was selected by simple random sampling. Data was collected within 5 days using structured interview questions which was used to interview them.

The access to the community was through the local council 1 (LC1) of every village under study, where the LC1 assigned a representative persons which were three women and one boy to guide through the community during data collection.

Study Inclusive

Women who were within child-bearing age (15-49) in the community at the time of the study who have ever delivered children. Only women who were residing in Mukura sub county within the five parishes.

Data Collection Tools

Structured interview tools were used to assess BP/CR among community women within child-bearing age residing at Mukura Sub County. The data was collected using structured interview questions inform of open and close ended questions. The tool was pre-

tested in Kapir health center IV. The tools addressed the objectives and research questions on socio demographic characteristic, awareness on obstetric danger signs, and practices of the pregnant women towards BP/CR at Mukura sub county health centers.

Plan for Data Analysis

Data was collected from the field, entered in the computer using Epinfo and export to SPSS version 20, descriptive statistic was used to describe the distribution of all variables. It was then tabulated, and interpreted to percentage, charts, tables, and figures following explanation based on objectives of the study.

Quality Control Issues

Data was pretested in Kapir health center IV on 5% of the tool sample. Tools were interpreted at the time of interview as interpretation for validity. One research assistant was trained for one day on the study instrument and collection procedure, and the data was filled in the interview questions immediately each respondent answers the question for accuracy, time saving and to complete interview questions. The principal investigator strictly followed the overall data collection activities.

Results

Socio-economic factors that influence birth preparedness and complication readiness among women within reproductive age in Mukura Sub County Ngora District Eastern Uganda.

Table 1. Socio-economic Factors of the Participants (n=422)

Variable	Category	Frequency	Percent
Age	15-19 years	65	15.4
	20-24 years	151	35.8
	25-34 years	129	30.6
	35-49 years	77	18.2
Education level	No formal education	95	22.5
	Primary level	154	36.5

	Secondary level	139	32.9
	Tertiary/College level	34	8.1
Occupation	Housewife/not working	339	80.3
	Employed	30	7.1
	Business woman	53	12.6
Religion	Church Of Uganda	111	26.3
	Roman Catholic	131	31.0
	Moslem	63	14.9
	Pentecostals	117	27.7
Marital status	Single	105	24.9
	Married	269	63.7
	Divorced/separated	35	8.3
	Widowed	13	3.1
Number of children	1-2	155	36.7
	3-4	151	36.0
	5-6	83	19.5
	7 and above	32	7.6
Distance to nearest gov't primary H/C	Walkable	118	27.9
	Not walkable	304	72.1
Cost of transport to health centre	Yes	278	65.9
	No	144	34.1
Knowledge- know any danger signs of obstructed labour?	Yes	103	24.4
	No	319	75.6
Practice – Attend ANC more than 3 times?	Yes	214	50.7
	No	208	49.3
Practice – Deliver or prefer to Deliver from health facility or Home?	Home	128	30.3
	Health facility	294	69.7

Table 1 presents results about socio-economic factors that influence birth preparedness and complication readiness among women within reproductive age in Mukura Sub County Ngora District Eastern Uganda. Respondents who were 15-19 years of age were 15.4%, 20-24 years were 35.8%, 30.6% were of 25-34 years old and 18.2% were of 35-49 years old. The participants who never attended formal education were 22.5%, primary education level were 36.5%, 32.9% attended secondary education, meanwhile 8.1% of the respondents attended tertiary education. As regard occupation of the respondents, 80.3% of the respondents were housewives who were not working, 7.1% were working as civil servants, and 12.6% were business-women. Of 422

women of reproductive age who participated in the study, 26.3% of them belonged to COU, 31.0% belonged to Roman Catholic, 14.9% were Muslims, and 27.7% of the respondents were born again. 24.9% of the respondents were single, 63.7% were married, 8.3% were divorced and 3.1% were widowed. For family size, respondents who had 1-2 children were 36.7%, those who had 3-4 children were 36.0%, 19.7% had 5-6 children and 7.6% had above 7 children. 37.0% of the respondents stated that they had to walk less than 5 kilometers to the nearest government primary health facility, 54.7% said moved 6-10 kilometers, 6.9% conformed that they moved 11-15 kilometers and 1.4% of the respondents said they moved between 16-20 kilometers to reach the nearest

government primary facility. 1.4% of the respondents stated that Distance from the centre where they got emergency operation, blood transfusion and skillful health workers was 16-21 kilometers, 53.1% said it was 22-27 kilometers while 45.5% of the respondents said it was between 28-35 kilometers.

As regard the cost of transport to the centre for emergency care services when in

complication said that it was affordable, 47.6% stated that transport cost was very high but affordable, 11.6% said transport cost was very high and not affordable at all while 25.4% stated that they used motorcycles or bicycles to as a means of transport to reach the facility for emergency services.

Table 2. Bivariate Analysis to Determine the Factors that are Associated with Birth Preparedness and Complication Readiness among Women within Reproductive Age in Mukura Sub County Ngora District Eastern Uganda

Variable	Category	Birth preparedness		COR(95%)CI	P-Value
		Yes	No		
Age	15-19 years	41	24	1.68(1.52-1.86)	0.000
	20-24 years	123	28	0.86(0.75-0.99)	0.072
	25-34 years	92	37	1	-
	35-49 years	43	34	1.27(1.12-1.45)	0.000
Education	No formal education	31	64	6.14(4.41-8.53)	0.000
	Primary	72	82	2.11(1.88-2.37)	0.026
	Secondary	104	35	1.38(1.25-1.54)	0.019
	Tertiary/College 21 13	1	-	-	-
Occupation	Housewife/not working	231	108	4.58(4.15-5.15)	0.000
	Employed	23	7	1	-
	Business woman	24	29	2.01(0.66-2.49)	0.008
	Single	65	40	2.60(2.20-3.07)	0.000
	Married	187	78	1	-
	Divorced/Separated	21	14	1.65(1.40-1.94)	0.000
	Widowed	8	5	1.53(1.34-1.76)	0.000
Number of children	1-2	115	40	0.76(0.57-1.02)	0.481
	3-4	97	55	1	-
	5-6	45	38	1.41(1.25-1.58)	0.041
	7 and more	9	23	2.95(2.63-3.31)	0.000
Distance to Health Facility	Walkable	88	30	1	-
	Not walkable	145	159	5.29(3.78-7.39)	0.000
Cost of transport	Not affordable	183	174	4.91(1.46-6.50)	0.010
	Affordable	38	27	1	-
Perception-Do you think any woman can get complication during pregnancy and labour?	Yes	144	134	1	-
	No	66	78	6.14(4.41-8.53)	0.000
Knowledge-Do	Yes	63	40	1	-

you know of any danger signs of obstructed labour?	No	151	168	3.19(0.70-4.6)	0.013
Practice-Do you always attend ANC for more than 3 times	Yes	127	87	1	-
	No	97	111	2.95(2.63-3.31)	0.000
Practice-Where do you always or prefer to deliver from?	Hom	57	71	3.80(3.42-4.86)	0.006
	Facility	201	93	1	-

Bivariate analysis with an adjusted odds ratio at 95% confidence level was performed to determine the factors that were associated with birth preparedness and complication readiness among women within reproductive age and as indicated, age of 15-19 years were 2 times more likely not be prepared for birth complications as compared to those 25-34 years with odds ratio 1.68(1.52-1.86), p-value 0.000, women with no formal education were 6 times more likely not be prepared for any birth complications as compared to those with tertiary education with COR = 6.14(4.41-8.53) with p-value 0.000. Women with primary education level were 2 times not likely to be prepared for any birth complication with COR = 2.11(1.88-2.37) with p-value 0.026. Women who were housewives and were not working were 5 times more likely not be prepared for any birth complication as compared to working house wives with COR = 4.58 (4.15-5.15) with p-value 0.000. I also discovered that women who were not married but staying single were 3 times more likely not be prepared for ant birth complications as compared to women who were married and were staying with their husbands with COR = 2.60(2.20-3.07) with p-value 0.000. The study also revealed that women with more than six children were 3 times more likely not to be prepared for any birth complication as compared to those with 3-4 children with COR = 2.95(2.63-3.31) with p-value 0.000. it was also discovered that women who stayed very far

away from any government health facility were 5 times more likely not be prepared for any birth complication as compared to those who stayed near the public health facility with COR 5.29(3.78-7.39) with p-value of 0.000. In relation to Distance to the health facility, cost of transport significantly influenced women's preparedness for birth complications with COR 4.91(1.46-6.50) with p-value 0.010 such that women who could not afford transport fair were 5 times more likely not to be prepared for birth complication as compared to those afforded transport fair. The study further discovered that, women's readiness for birth complications was associated to perceptions and women who thought that not every women could get birth complication at any pregnancy were 6 times more likely not be prepared for birth complications. COR 6.14(4.41-8.53). Women who were not knowledgeable about the danger signs of birth complication were discovered to be 3 times more likely not be prepared for birth complications as compared to those who were knowledgeable about danger signs of birth complications with COR = 3.19(0.70-4.60), p-value 0.013. I was also able to discover that women who did not attend ANC at all or for less than three times were 3 times more likely not be prepared for birth complication as compared to those women who attended ANC for more than three times with COR = 2.95(2.63-3.31), p-value 0.000. Place where the mother delivers from or prefers to deliver from

significantly influenced birth complication preparedness such that women who deliver from home or prefer to deliver from home were 4 times more likely not to be prepared for any birth complication as compared to those who deliver or prefer to deliver from the health facility with COR = 3.80(3.42-4.86), p-value 0.006.

Discussion of Results

Socio-economic Demographic Factors

Table 1 on chapter four, presents' results about socio-economic demographic characteristics of the respondents. 15.4% of the respondents were of age 15-19 years, 35.8% were of 20-24 years, 30.6% were of 25-34 years old and 18.2% were of 35-49 years old. In Africa, early marriages is more common, and more so in Uganda early marriages is practice among young teenage girls which is due to forced marriages, poverty and sometime religious influence which is more common in common in rural areas of Uganda according to [30] Uganda MOH report that these factors due to maternal health care services where the teenage pregnant girls do not attend ANC as well as preparedness due lack of decision what do.

Uganda MOH report. These are factor to maternal health care services where the teenage pregnant girls do not attend ANC as well as birth preparedness due lack of decision on what do. 22.5% of the respondents never attended formal education, 36.5% attended primary education, and only 8.1% of participants attended tertiary education. Women who are educated are more likely to use health care services even in developing countries than those with low education who find it as an obstacle because they cannot make a quick decision when in danger because they have enough knowledge, according to [31].

Educated women are more a better class, and the people thy associate with the help he hem better in decision-making because of education level, hay are faster in the decision, according

to [32] in a study done in Kenyatta National Hospital in Kenya found that the level of education of women positively influence birth preparedness that the educated the women, the better the chance to make decision because they are aware of the danger that comes a head. They are able to know the outcome as they think deeper, the same study also pointed out that the educated women are more likely to associate with people of high educated class who are influential.

As regard occupation of the respondents, 80.3% of the respondents were housewives who were not working, 12.6% were business women, and only 7.1% were working. Women have taken a leading role in managing families as heads and therefore empowered women are more responsible for taking care of themselves when it comes to pregnancy because they have the finances. 37.0% of the respondents stated that they had to walk less than 5 kilometers to the nearest government primary health facility, 54.7% said moved 6-10 kilometers, 6.9% conformed that they moved 11-15 kilometers and 1.4% of the respondents said they moved between 16-20 kilometers to reach the nearest government primary facility. 1.4% of the respondents stated that the Distance from the center where they got the emergency operation, blood transfusion, and skillful health workers was 16-21 kilometers, 53.1% said it was 22-27 kilometers, while 45.5% of the respondents said it was between 28-35 kilometers. As regards the cost of transport to the centre for emergency care services, when in complication said that it was affordable, 47.6% stated that transport cost was very high but affordable, 11.6% said transport cost was very high and not affordable at all, while 25.4% stated that they used motorcycles or bicycles to as a means of transport to reach the facility for emergency services.

People living in Remote and Very remote areas generally have poorer access to health services than people in urban areas. This significantly reduces their chances to access

available health services such as ANC, where pregnancy status is monitored.

The findings of the study were in line with [33] who conducted a survey on the distance to primary care facilities and healthcare utilization for preschool children in rural northwestern Burkina Faso: results from a surveillance cohort pointed out that out of 226 study communities, 12,676 primary healthcare visits were recorded over the three-month period. The median distance between the community and primary healthcare facility was 5.0 km (IQR 2.6 to 6.9 km), and the median number of healthcare visits per 100 child-months at the community level was 6.7 (IQR 3.7 to 12.3).

The rate of primary healthcare visits declined with increasing distance from the clinic (Spearman's rho -0.42 , 95% CI -0.54 to -0.31 , $P < 0.0001$). This relationship was similar for cause-specific clinic visits (including pneumonia, malaria, and diarrhea) and for antibiotic prescriptions.

Knowledge on Obstetric Danger Signs

As presented in table 3, 79.6% of the respondents acknowledged that they had alive births in their previous birth outcomes of babies, 12.8% said they had experienced still births, 4.7% stated that their babies died within 1 months of prolonged hospitalization, while 2.8% of the respondents said that they produced abnormal children following difficult labour. When the respondents were asked whether they had ever got any complications in their bodies in the previous births, 69.7% stated that they had complications, while only 30.3% said they did not experience any complication in the previous births. These complications are attributed to a lack of health talk programs to educate the mothers on danger preparedness.

For those women who had complications in the previous births, 13.3% said it was lameness, 15.4% said the complication they experienced was leaking both urine and faeces from the private parts, 4.3% stated that the complication was fits, 9.7% had too much bleeding while

27.0% experienced maternal exhaustion. When asked to explain what birth plan and complication readiness were, only 57.1% of the respondents stated it correctly, while 42.9% stated a wrong definition. As regards the source of information about birth preparedness and complication readiness, 4.5% of the respondents stated that they got the information from the health workers, 1.7% said they got the information from village health teams, 23.9% confirmed that they obtained the information from the family members, 27.5% got the information from the community health meetings, and only 1.4% did not respond to the question. 91.0% of the respondents admitted that women get complications during pregnancy, labour, and puerperium while only 7.1% said women don't get complications during pregnancy, labour, and puerperium. 1.9% of the respondents had no idea about the question.

Out of 384 respondents who admitted that women get complications during pregnancy, 32.2% said the complication is vaginal bleeding, 13.5% said its fits or convulsions, 9.2% stated that the complication is little or no blood in the body, 4.3% said baby stop moving, 4.7% stated that the complication during pregnancy is swelling of face, hands, legs, and feet, 18.0% said fever or headache and 9.0% of the respondents said severe STIs and UTI are the major complications during pregnancy.

The respondents were asked about the dangers of labour, 46.2% stated that it is obstructed labour, 6.4% said it is labour longer than 12 hours, 2.8% stated that it is cord prolapse, 16.1% mentioned maternal exhaustion, 8.5% stated breathlessness, 4.5% confirmed retained placenta while 14.0% mentioned vaginal bleeding. Only 1.4% of the respondents had no idea about complications during labour. As regards the danger signs in newborn, 10.2% of the respondents said a very small baby, 14.0% mentioned very weakly or unconsciousness, 7.3% mentioned convulsions, 19.4% said its difficult/fast breathing, and

47.4% stated that its fevers or low temperatures. 1.7% had no idea about complications of the newborn.

According to [34], midwives and other health care providers are added more knowledge and skill to create more awareness inform of health education in ANC and community campaigns on birth preparedness and complication readiness, but a few of Ugandans in some parts have possibly responded to, and no specific data was found whether Kigoroby sub-county in Hoima municipality is among them, the [34] report pointed out that most dangers that increase the ratio of maternal and neonatal mortality and morbidity are prolonged obstructed labour, fits, use of native medicines by the communities in most Ugandan settings, and because of lack of awareness by the women, they are not aware that these need more attention and they sit at home.

This study will therefore be done to point out whether, from 2010 study and now if there are any improvements in the level of awareness of these community women on birth preparedness basing on the skills the health providers have attained.

Practices Regarding Obstetric Danger Signs

Table 5 presents results regarding the practices of the respondents towards obstetric danger signs. 93.8% of the respondents had attended ANC, while 6.2% never attended the ANC. Of those who attended ANC, 14.2% of them started ANC less than 3 months, 47.2% started ANC at 4-6 months, while 32.5% started their ANC at 7-9 months. 8.3% of the mothers who attended ANC, attended it once during pregnancy, 23.0% attended ANC only twice, 49.1% of the mothers attended ANC only three times and 13.5% attended four times., 34.6% of the respondents attended health education on the practice of proper hygiene, 13.3% attended health education talks on how to prepare items for use like loves, cotton, gauze, soap,

polythene, razor. 11.4% of the mothers attended health talks on how to deliver under skillful personnel, 12.8% to avoid the use of native medicine, 6.4% to prevent malaria by sleeping under treated mosquito nets, 1.9% on dangers of home delivery, 2.8% were not taught, 3.3% said they attended the health talks but did not understand the language, 11.8% on HIV prevention.

On what they prepare for birth, 37.2% of the respondents said they prepare pairs of gloves, 12.6% said they prepare polythene sheets for giving birth, 29.9% prepare baby's warm sheets and clothing, 3.1% prepare caretakers, 11.8% prepare some money for emergencies and transport to a better hospital, 4.7% prepare personal clothing, and 0.7% did not respond. The source of income for the materials prepared, 39.1% said its a small personal business, 32.9 stated that from the husbands, 4.3% said they get help from friends, 8.8% get assistance from family members while 14.9% of respondents said that their income is from agriculture.76.5% of the respondents deliver from the health facility, 10.9% deliver from home with mother, mother in law, 9.7% delivered by traditional birth attendants, and 2.8% said they deliver at home alone. Out of 323(76.5%) mothers who deliver from the health facility, 312(73.9%) deliver from HC III, 11(2.6%) delivered from Hoima regional referral hospital, and 11(2.6%) said they delivered from private clinics within the area. 52.1% of the respondents stated that in case of emergency obstetric care, they are taken to Ngora Fredica hospital, 8.1% said they are taken to private HC IV in Mukura, and 39.8% said they are taken to HC III at the sub-county. Why did mothers deliver from the respective facilities, 15.6% said because of skillful personnel, 22.7% stated that because they offer emergency care, and 21.3% of the respondents said because of the availability of the health services.

As regards the mode of transport used to reach the delivery place, 15.6% of the

respondents stated that they use bicycles, 57.1% said they use motorcycles, 17.8% use vehicles, and 9.5% said they move on foot. When it reaches the time for delivery, 37.2% of the respondents said they take their husbands to take care of them, 35.3% said they take their mothers, 14.9% take their mothers in law 3.6% take friends, 3.8% take neighbours, and 5.0% said they go alone.

According to [35], in his study in Kenya found out that the cost incurred during ANC, delivery hinders planning and practices for birth and seeking maternity health care services. They, therefore, develop poor attitudes towards birth preparedness hence putting them not to pre-prepare for birth. But this has also been pointed out by [36] Uganda showing that most health workers, especially midwives, put a cost on the services offered to these women during both labour and ANC time, which has negatively impacted the women on birth preparedness, thus hindering birth practices. They will not get services such as health education sessions such as on birth preparedness, instruction on what to do during pregnancy, what to prepare, and package such as giving TT, folic acid, and ferrous and folic acid administration.

In Uganda, according to [37] 92% of women receive at least 1 ANC visit, but only 42% give birth under the aid of a skilled attendant, compared to 39% of women who attend skilled full services and 42% which is below the average African (HSD/WP/08/05). But 92% of the women attended ANC according to this study and which is above the average of 63% of Africa average according to the safe motherhood (2011) report, it is not then clear whether they received the package of birth plan.

References

[1] Ronsmans, C. & Yinger (2009). Levels and causes of maternal mortality and morbidity. *Reproductive, Maternal, Newborn, and Child Health*, p.51.

Conclusions

The following variables are significantly associated with preparedness for birth complications.

1. Age (15-19 years COR = 1.68, p-value 0.000).
2. Education level (no formal education COR = 6.1, p-value 0.000).
3. Occupation (housewife not working COR = 4.58, p-value 0.000).
4. Marital status (Single mothers COR = 2.60, p-value 0.000).
5. Number of children (more than 6 children COR = 2.95, p-value 0.000).
6. Distance to the health facility (Not walkable COR = 5.29, p-value 0.000).
7. Cost of transport to the health facility (Not affordable COR = 4.91, p-value 0.010).
8. Perceptions COR = 6.14, p-value 0.000.
9. Knowledge (lack of knowledge on danger signs of birth complications COR = 3.19, p-value 0.000).
10. Practice (not attending ANC COR = 2.95, p-value 0.000).
11. Practice (delivering from home COR = 3.80, p-value 0.006).

Conflicts of Interest

The author declares that there have been no conflicts of interest in this study and its outcomes.

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[2] The world health report 2011: primary health care: now more than ever. World Health Organization.

[3] Semyalo, V.B.N.S., 2010. The effects of poverty on child health in relation to the socio-economic

- status of mothers: a case study of Nakawe division, Kampala district, Uganda (Master's thesis, Universitetet i Agder, University of Agder).
- [4] Hiluf, M. and Fantahun, M., 2008. Birth preparedness and complication readiness among women in Adigrat town, north Ethiopia. *Ethiopian Journal of Health Development*, 22(1), pp.14-20.
- [5] Van Lerberghe, W., (2008). The world health report 2008: primary health care: now more than ever. World Health Organization.
- [6] Agbodohu, D., 2013. Birth Preparedness and Complication Readiness Among Expectant Mothers at the Ridge Regional Hospital, Accra (Doctoral dissertation, University of Ghana).
- [7] Ayelech, K. (2015). Assessment of knowledge about birth preparedness and complication readiness and associated factors among prime gravida women in Ababa government health facilities (Doctoral dissertation, AAU).
- [8] Pillitteri, A., 2010. Maternal & child health nursing: Care of the child-bearing & childrearing family. Lippincott Williams & Wilkins.
- [9] Soubeiga, D., Gauvin, L., Hatem, M.A. and Johri, M., 2014. Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: systematic review and meta-analysis. *BMC pregnancy and child-birth*, 14(1), p.129.
- [10] Lee, A.C., Lawn, J.E., Cousens, S., Kumar, V., Osrin, D., Bhutta, Z.A., Wall, S.N., Nandakumar, A.K., Syed, U. and Darmstadt, G.L., 2009. Linking families and facilities for care at birth: What works to avert intrapartum-related deaths? *International Journal of Gynecology & Obstetrics*, 107(Supplement).
- [11] Ali, A., (2010). Academic-Private Sector Collaboration in Public Health Operations Research.
- [12] Yadav, R., and Malhotra, A.K., (2016). Birth Preparedness and Complication Readiness Plans among Antenatal Attendees at Primary Health Centre of District Jhansi, UP, India. *Int J Intg Med Sci*, 3(4), pp.258-64.
- [13] Aldrich, E.C., (2014). Transport-related delays and maternal mortality in Uganda: the effects of managed and controlled mobility on maternal health and well-being (Master's thesis).
- [14] Mugambi, C.K., (2014). Determinants of utilization of free maternal health care in Muhuru and Nyatike divisions, Nyatike sub-county, Kenya (Doctoral dissertation, University of Nairobi).
- [15] Kakaire, O., Kaye, D.K. and Osinde, M.O., 2011. Male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. *Reproductive health*, 8(1), p.12.
- [16] Nam, S.L., 2011. Figo Saving Mothers and Newborns Project in Uganda.
- [17] Assfaw, Y.T., (2010). Determinants of antenatal care, Institutional delivery and skilled birth attendant utilization in SamreSaharti District, Tigray, Ethiopia (Doctoral dissertation, Umeå International School of Public Health).
- [18] Owoseni, J.S., Adewumi, F. and Alade, F.O., 2015. Determinants of Maternal Health Services use Among Pregnant Women in Ibadan, Oyo State, Nigeria. *Journal of Obstetrics and Gynecology, India*, 10(14), pp.288-307.
- [19] Nuwagira, C., 2014. Understanding maternal mortality ratio reduction bottlenecks in Uganda. A system dynamics approach for policy development (Master's thesis, The University of Bergen).
- [20] Agarwal, S., Sethi, V., Srivastava, K., Jha, P.K. and Baqui, A.H., (2010). Birth preparedness and complication readiness among slum women in Indore city, India. *Journal of Health, Population, and Nutrition*, pp.383-391.
- [21] Ngugi, D., (2015). Influence of Informal Finance on Mothers' Healthcare in Mtwara, Tanzania (Doctoral dissertation, Kenyatta University).
- [22] Mbonye, A.K., Sentongo, M., Mukasa, G.K., Byaruhanga, R., Sentumbwe-Mugisa, O., Waiswa, P., Naamala Sengendo, H., Aliganyira, P., Nakakeeto, M., Lawn, J.E. and Kerber, K., 2012. Newborn survival in Uganda: a decade of change and future implications. *Health policy and planning*, 27(suppl_3), pp. iii104-iii117.
- [23] Wilunda, C., Oyerinde, K., Putoto, G., Lochoro, P., Dall'Oglio, G., Manenti, F., Segafredo, G., Atzori, A., Criel, B., Panza, A. and Quaglio, G., (2015). Availability, utilization, and quality of

- maternal and neonatal health care services in Karamoja region, Uganda: a health facility-based survey. *Reproductive health*, 12(1), p.30.
- [23] Magoma, M., Requejo, J., Campbell, O.M., Cousens, S. and Filippi, V., 2010. High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention. *BMC pregnancy and child-birth*, 10(1), p.13.
- [24] Ackers, L., Ioannou, E., and Ackers-Johnson, J., 2016. The impact of delays on maternal and neonatal outcomes in Ugandan public health facilities: The role of absenteeism. *Health policy and planning*, 31(9), pp.1152-1161.
- [25] Aldrich, E.C., 2014. Transport-related delays and maternal mortality in Uganda: the effects of managed and controlled mobility on maternal health and well-being (Master's thesis).
- [26] Kakaire, O., Kaye, D.K. and Osinde, M.O., 2011. Male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. *Reproductive health*, 8(1), p.12.
- Nam, S.L., 2011. Figo Saving Mothers and Newborns Project in Uganda.
- [27] Semyalo, V.B.N.S., 2010. The effects of poverty on child health in relation to the socio economic status of mothers: a case study of Nakawe division, Kampala district, Uganda (Master's thesis, Universitetet i Agder, University of Agder).
- [28] Schlecht, J., Rowley, E. and Babirye, J., 2013. Early relationships and marriage in conflict and post-conflict settings: Vulnerability of youth in Uganda. *Reproductive health matters*, 21(41), pp.234-242.
- [29] Kabakyenga, J.K., Östergren, P.O., Turyakira, E. and Pettersson, K.O., (2012). Influence of birth preparedness, decision-making on the location of birth and assistance by skilled birth attendants among women in south-western Uganda. *PloS one*, 7(4), p.e35747.
- [30] Schlecht, J., Rowley, E. and Babirye, J., 2013. Early relationships and marriage in conflict and post-conflict settings: Vulnerability of youth in Uganda. *Reproductive health matters*, 21(41), pp.234-242.
- [31] Kalule, I., 2016. Using learning exhibitions in teaching learning of food production: An Action Research project aimed at improving quality of graduates through skills development at the Hotel and Tourism training Institute Jinja, Uganda (Master's thesis, Høgskolen i Oslo og Akershus. Institutt for yrkesfaglærerutdanning).
- [32] Makunyi, e.g., 2014. Birth preparedness among women in Tharaka Nithi County, Kenya (doctoral dissertation, Kenyatta university).
- [33] Mugambi, C.K., (2014). Determinants of utilization of free maternal health care in Muhuru and Nyatike divisions, Nyatike sub-county, Kenya (Doctoral dissertation, University of Nairobi).
- [34] Atekyereza, P.R., 2001. Atekyereza/Educating Girls and Women in Uganda the education of girls and women in Uganda. *Journal of Social Development in Africa*, 16(2).
- [35] Lee, A.C., Lawn, J.E., Cousens, S., Kumar, V., Osrin, D., Bhutta, Z.A., Wall, S.N., Nandakumar, A.K., Syed, U., and Darmstadt, G.L., 2009. Linking families and facilities for care at birth: What works to avert intrapartum-related deaths? *International Journal of Gynecology & Obstetrics*, 107(Supplement).
- [36] Ngugi, D., (2015). Influence of Informal Finance on Mothers' Healthcare in Mtwara, Tanzania (Doctoral dissertation, Kenyatta University).
- [37] Magoma, M., Requejo, J., Campbell, O.M., Cousens, S. and Filippi, V., 2010. High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention. *BMC pregnancy and childbirth*, 10(1), p.13.