# Birth Preparedness and Complication Readiness amongst Antenatal Attendees in

## Yenagoa, South-South, Nigeria.

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### Abstract

**Background:** In our society now and the past, cultural beliefs and lack of awareness inhibit preparation in advance for delivery and expected baby. Since no action is taken prior to the delivery, the family tries to act only when labour begins. The majority of pregnant women and their families do not know how to recognize the dangerous signs of complications. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility.

**Objectives:** To assess birth preparedness and complication readiness amongst antenatal attendees in Yenagoa metropolis.

**Methods:** This was a cross-sectional descriptive study done amongst pregnant women of childbearing ages attending ANC clinics using an intervieweradministered semi-structured questionnaire. Participants were selected using a systematic random sampling technique. There was a birth preparedness and complication readiness scoring system developed and applied. The data collected were analyzed using SPSS version 20.

**Results:** The majority 242 (93.1%) of the respondents were aware of birth preparedness. Most 229 (88.1%) got their information from health workers. The majority 224 (86.2%) selected a place for the birth of their child. The majority 233 (89.6%) can recognize the onset of labour. The birth preparedness plan was understood by 219 (84.2%) participants. Danger signs could be recognized by 221 (85.0%). Complication readiness plan was understood by 125 (48.1%), 209 (80.4%) chose the healthcare provider in case of an emergency, 174 (66.9%) stay close to their healthcare provider and 242 (93.1%) knows the transportation systems on how to get to the health facility in case of emergency. Using the birth preparedness and complication readiness scoring results, the majority of the study participants 197 (75.8) were not prepared for birth and not ready for complications while only 63 (24.2) were prepared.

**Conclusion:** Birth preparedness and complication readiness amongst respondents was poor. There is a need for education of women and improving their socioeconomic status for better knowledge and attitude to birth preparedness and complication readiness.

Keywords: Birth preparedness • Complication readiness • Antenatal attendees • Yenagoa

#### Introduction

Global Strategy for Women's and Children's Health in September 2010 was launched [1]. Today we have both the knowledge and the opportunity to end

preventable deaths among all women, children and adolescents, greatly improve their health and well-being and bring about the transformative change needed to shape a more prosperous and sustainable future. That is the ambition of Global Strategy for Women's, Children's and Adolescents' Health [1]. United Nations Commission on Life-Saving Commodities for Women's and Children's Health strengthened the availability and supply of essential interventions [2]. Several global action plans and reports were launched to address and bring attention to neglected areas with support for country implementation [1]. Millions of lives were saved and progress towards the health Millennium Development Goals (MDGs) was accelerated [3]. Strides were made in areas such as increasing access to contraception and essential interventions, reducing maternal and child mortality and malnutrition and combating HIV/AIDS, malaria and tuberculosis [3-5].

However, far too many women, children and adolescents worldwide still have little or no access to essential, good-quality health services and education, clean air and water, adequate sanitation and good nutrition. They face violence and discrimination, are unable to participate fully in society, and encounter other barriers to realizing their human rights [3-5]. As a result, as the MDG era draws to a close, the annual death toll remains unacceptably high: 289,000 maternal deaths, 2.6 million stillbirths, 5.9 million deaths in children under the age of five -including 2.7 million newborn deaths and 1.3 million adolescent deaths [6-8]. Most of these deaths could have been prevented. Many more people suffer illness and disability and fail to reach their full potential, resulting in enormous loss and costs for countries both today and future generations.

In many societies in the world, cultural beliefs and lack of awareness inhibit preparation in advance for delivery and expected baby. Since no action is taken prior to the delivery, the family tries to act only when labour begins. The majority of pregnant women and their families do not know how to recognize the dangerous signs of complications. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money, finding transport and reaching the appropriate referral facility [9].

It is difficult to predict which pregnancy, delivery or post-delivery period will experience complications; hence birth preparedness and complication readiness plan is recommended with the notion of pregnancy is a risk. BP/CR strategy encourages women to be informed of danger signs of obstetric complications and emergencies, choose a preferred birth place and attendant at birth, make an advance arrangement with the attendant at birth, and arrange for transport to a skilled care site in case of emergence, saving or arranging alternative funds for costs of skilled and emergency care, and finding a companion to be with the woman at birth or to accompany her to emergency care source. Other measures include identifying a compatible blood donor in case of haemorrhage, obtaining permission from the head of household to seek skilled care in the event that a birth emergency occurs in his absence and arranging a source of household support to provide temporary family care during her absence [9].

In 2004, a cross-sectional survey with a random sample of respondents was conducted to measure the impact of birth-preparedness and complication readiness on the use of skilled providers at birth. Of the 180 women who had given birth within 12 months of the survey, 46.1% had a plan for transportation, and 83.3% had a plan to save money. Women with these plans were more likely to give birth with the assistance of a skilled provider (p=0.07 and p=0.03 respectively). Controlling for education, parity, the average distance to the health facility, and the number of antenatal care visits, planning to save money was associated with giving birth with the assistance of a skilled provider (p=0.05). Qualitative interviews with women who had given birth within 12 months of the survey (n=30) support these findings. Most women saved money for delivery but had fewer concrete plans for transportation [10].

A cross-sectional study was done to explore the association between knowledge of obstetric danger signs and birth preparedness among recently delivered women in south-western Uganda. Community survey methods were

used and 764 recently delivered women from 112 villages in the Mbarara district were included in the study. Interviewer-administered questionnaires were used to collect data. Logistic regression analyses were conducted to explore the relationship between knowledge of key danger signs and birth preparedness. The results showed that 52% of women knew at least one key danger sign during pregnancy, 72% during delivery and 72% during postpartum. Only 19% had knowledge of 3 or more key danger signs during the three periods. Of the four birth preparedness practices; 91% had saved money, 71% had bought birth materials, 61% identified a health professional and 61% identified means of transport. Overall, 35% of the respondents were birth prepared. The relationship between knowledge of at least one key danger sign during pregnancy or during postpartum and birth preparedness showed statistical significance which persisted after adjusting for probable confounders (OR 1.8, 95% CI: 1.2-2.6) and (OR 1.9, 95% CI: 1.2-3.0) respectively. Young age and high levels of education had a synergistic effect on the relationship between knowledge and birth preparedness. The associations between knowledge of at least one key danger sign during childbirth or knowledge that prolonged labour was a key danger sign and birth preparedness were not statistically significant [11].

A community-based cross-sectional study was conducted in Gobaworeda, Oromia region, Ethiopia to assess birth preparedness and complication readiness among women of the childbearing age group. Multistage sampling was employed. Descriptive, binary and multiple logistic regression analyses were conducted. Statistically, significant tests were declared at a level of significance of P value < 0.05. The results showed that only 29.9% of the respondents were prepared for birth and its complications. And, only 82 (14.6%) of study participants were knowledgeable about birth preparedness and complication readiness. Variables having statistically significant association with birth preparedness and complication readiness of women were attending up to primary education (AOR=3.24, 95% CI=1.75, 6.02), attending up to the secondary and higher level of education (AOR=2.88, 95% CI =1.34, 6.15), the presence of antenatal care follow up (AOR=8.07, 95% CI = 2.41, 27.00), knowledge about key danger signs during pregnancy (AOR=1.74, 95% CI=1.06,2.88), and knowledge about key danger signs during the postpartum period (AOR=2.08, 95% CI=1.20,3.60) [9].

#### Methods

The study was carried out in the Yenagoa metropolis which is the capital of Yenagoa Local Government Area of Bayelsa State, Nigeria. Bayelsa State is one of the 36 States, along with the FCT, Abuja, that made up the Federal Republic of Nigeria. Bayelsa has a riverine and estuarine setting. A lot of her communities are almost (and in some cases) completely surrounded by water, hence making these communities inaccessible by road. Yenagoa lies in the south at 4°55'29" North and 6°15'51" East. It has a total land area of 706 square kilometres and a population of 353,344 at the 2006 census [10]. Yenagoa is the traditional home of the Ijaw people. The Ijaw from the majority in Bayelsa State. English is the official language but Epie/Atissa language is the major local language spoken in Yenagoa. Yenagoa has 6 Primary Healthcare centres, 2 secondary healthcare centres and 1 tertiary healthcare Center and many private clinics that offer antenatal services. Other services offered at these centres include Health education, immunization, family planning counselling, treatment of minor ailments and first aid, referrals, ante-natal, delivery and post-natal care services.

The study was a cross-sectional descriptive study design amongst pregnant women of childbearing age attending antenatal clinics in Government hospitals in Yenagoa metropolis. All government hospitals in the Yenagoa metropolis were included in this study. The women were in their 3rd trimester of pregnancy. Pregnant women attending antenatal clinics in whom a viable outcome of the pregnancy is expected and pregnant women with a gestation period between 28 weeks and 42 weeks at the time of data collection were included in this study. While pregnant women attending an antenatal clinic that are ill-looking and pregnant women who did not give their consent were excluded from this study. The study was carried out over an 18-month period (January 2015-June 2016).

The minimum sample size for this study was determined by using the formula for studying one proportion [12].

#### Where:

n = the desired sample size when the population is greater than 10,000

z = standard normal deviate (1.96 at 95 % confidence level)

p = the prevalence or proportion of event of interest for the study

d = degree of precision desired which is set at 5% (0.05)

In a previous study in Zaria, the knowledge of obstetric danger signs was

18.3% [13].

1. . . . . . .

$$q = 1.0 - p = 0.817$$

Therefore,

The minimum sample size was 230 respondents.

To make adjustments for possible non-response, we assumed a 10% nonresponse; the formula for non-response rate was used:

$$n/(1-nrr)$$

where:

n = calculated sample size=230

nrr =10% non-response rate

Therefore, 
$$\frac{230}{(1-\frac{10}{100})} = 255.6 \sim 256$$

n = 256

However, to broaden the base of the study the total number of women who met the criteria within the study period was used, hence a sample size of 277 questionnaires was administered. A systematic random sampling method was used in the selection of participants in the tertiary secondary and primary health care facilities. Hence, pregnant women attend routine antenatal clinics at the three levels of health care namely Federal Medical Centre, Yenagoa (a tertiary health facility); Diete Koki Memorial Hospital, Yenagoa (a secondary health facility); King Malla Sasime Medical Centre Igbogene, Yenagoa (a secondary health facility); Agadama-epie Health Centre, Yenagoa (a primary health centre); Yenezue-gene Health Centre, Yenagoa (a primary health facility); Opolo Health Centre, Yenagoa (a primary health facility); Azikoro Health Centre, Yenagoa (a primary health facility); Azikoro Health Centre, Yenagoa (a primary health facility); Xomen's Affairs Clinic, Ovum, Yenagoa (a primary health facility).

Based on the average monthly ANC attendance of the different facilities, sampling proportion to size was done.

Federal Medical Centre Yenegoa average monthly ANC attendance is 210 which equates to 84 of the 260 respondents. Diete-Koki Memorial Hospital average monthly ANC attendance is 100 which equates to 40 of 260 respondents. King Malla Sasime Hospital average monthly ANC attendance is 20 which equates to 8 respondents. Women Affairs Clinic average monthly ANC attendance is 50 which equates to 20 respondents. Azikoro Health Centre average monthly ANC attendance is 20 which equates to 8 respondents. Amarata Health Centre average monthly ANC attendance is 10 which equates to 4 respondents. Yenizue-Gene Health Centre monthly ANC attendance is 200 which equates to 80 respondents. Opolo Health Centre average monthly ANC attendance is 10 which equates to 12 respondents. Based on the average ANC monthly attendance of each health facility, the proportions of the sample size from each facility were calculated. For every 10 ANC attendances, 1 respondent was allotted (Table 1).

 Table 1. Quantitative data collection is used to obtain information and data relevant to the study objectives.

Sr. No.	Health facility	Average monthly attendance	Proportion	Total respondents allotted
1	Federal medical centre Yenagoa	210	21	84
2	Diete Koki Memorial Hospital	100	10	40
3	King Malla Sasime Hospital	20	2	8
4	Women Affairs Clinic	50	5	20
5	Azikoro Health Centre	20	2	8
6	Amarata Health Centre	10	1	4
7	Yenizue-Gene Health Centre	200	20	80
8	Opolo Health Centre	10	1	4
9	Agudama Health Centre	30	3	12
	Total	650	65	260

At the facilities level, the first client was chosen by simple random sampling followed by systematic random sampling with every fifth client being interviewed.

Quantitative data collection was used to obtain information and data relevant to the study objectives. This was done with the aid of a semi-structured interviewer-administered questionnaire. The questionnaire consisted of open and closed-ended questions. The questionnaire for the study was pretested using 30 respondents in a primary healthcare facility in the Gbarantoru community which is located about 8 km from Yenagoa. This was done to help to reduce areas of ambiguity in the tool thereby refining the final tool for the main study. The questionnaires were then screened for completeness by the researcher, coded, entered into the IBM SPSS version 20.0 software and analyzed.

The socio-economic status of the respondents was computed based on the occupation of the respondent's spouse and the level of education of the respondents. A score of 1 was given for spouses who had skilled professions, 2 for spouses with semi-skilled profession occupations and 3 for spouses with the unskilled profession. A score of zero was given to respondents with tertiary education, 1 to respondents with secondary education and 2 to respondents with primary education or none. The addition of the scores gave a composite score for social class with the highest class being I and the least class V.

#### Birth preparedness and complication readiness score

A total of 10 questions were used to assess birth preparedness and complication readiness score, a score of 1 was awarded for a correct answer and 0 for a wrong answer. Then the total score of each individual, out of the total 10 marks, was again computed on the SPSS software package. Then the mean, median, maximum value and minimum value were computed. A histogram with a normal distribution curve was done for the total score of the study participants and the distribution of the score of the respondents was seen. Since the distribution was a normal distribution, the median value was used as a reference to classify the study respondents. Accordingly, those respondents who score dabove the median value were classified as having good knowledge and those who score median and below the median value were classified as having poor knowledge.

Ethical approval to conduct this research was sought and obtained from the Federal Medical Centre, Yenagoa Hospital Research Ethics Committee. Permission was also sought from the heads of the various health facilities in the Yenagoa metropolis and both verbal and written consent was obtained from the respondents and they were health educated on the obstetric danger signs. The benefit of the study to participants was the opportunity to verbalize their views on the information they got from the Antenatal care sessions.

#### Result

A total of 277 mothers were enrolled in the study and 260 (93.9%) of them consented to the study. This gives a response rate of 93.9% which cut across the levels.

The mean age was 28.4 (sd=4.8), 29.3 (sd=4.2), and 28.5 (sd=5.3) for respondents from primary, secondary and tertiary health care facilities respectively. Overall, the age of the subjects ranged from 16 years to 42 years (range 26 years) with a mean of 28.7 (sd=4.8).

Almost all the women 258 (99.2%) were Christians, 1 (0.4%) Muslim and the other 1 (0.4%) traditional religion, Majority 239 (91.9%) of the women were married and of monogamous settings. 113 (43.5%) respondents were Ijaw in their ethnic group, followed by Igbo; 71 (27.3%) (Table 2).

 Table 2. Socio-demographic characteristics of the respondents.

Variable	Frequency (n=260)	Percentage (%)	
Age (years)			
15-19	6	2.3%	
20-24	41	15.8%	
25-29	99	38.1%	
30-34	80	30.8%	
≥ 35	34	13.1%	
Marital status			
Single	10	3.8%	

Married	239	91.9%
Cohabiting	11	4.2%
	Type of marriage	
Monogamous	235	90.4%
Polygamous	4	1.5%
Single or cohabiting	21	8.1%
	Religion	
Christianity	258	99.2%
Islam	1	0.4%
Traditional religion	1	0.4%
	Ethnicity	
Igbo	71	27.3%
ljaw	113	43.5%
Yoruba	6	2.3%
Ibibio	9	3.5%
Urhobo	16	6.2%
Anang	3	1.2%
Epie/Atissa	17	6.5%
Ukwuani	1	0.4%
Ogbia	4	1.5%
Ogoni	5	1.9%
Edo	1	0.4%
Kalabari	2	0.8%
Igala	1	0.4%
Ikwere	3	1.2%
Idoma	2	0.8%
Nembe	4	1.5%
Ogoja	1	0.4%
Ndoni	1	0.4%

The vast majority 141 (54.2%) of respondents had a secondary level of education, followed by tertiary education 101 (38.8%). In regard to their husbands, 203 (78.1%) were of class 1 status, next to class 3 status 49 (18.8%). Socioeconomic status 2 had the highest frequency 97 (37.3%), then statuses 1, 94 (36.2%) and the least was status 5, 4 (1.5%) (Table 3).

Table 3. Socio-economic characteristics of the respondents.

Variable	Frequency (n=260)	Percentage (%)	
LOE			
None	1	0.4%	
Primary	17	6.5%	
Secondary	141	54.2%	
Tertiary	101	38.8%	
Occupation of spouse			
1	203	78.1%	
2	8	3.1%	
3	49	18.8%	
SES			
1	94	36.2%	
2	97	37.3%	
3	26	10%	
4	39	15%	
5	4	1.5%	

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From the total number of mothers, 69(26.5%) are nulliparous, the majority 185(71.2%) had 1-4 children while 6(2.3%) mothers had 5 and more children. In the case of index history of pregnancy, 249(95.8%) had ANC follow-up, among those who had ANC follow-up, 150(57.7%) had 4 and more visits while 110(42.3) had less than 4 visits. The majority 239(91.9%) of the mothers know the distance of their home from the nearest health centre, among these categories, 235(90.4%) have 2 hours or less distance from home to the nearest health centre and whereas 4 have more than 2 hours distance from home to the nearest health centre (Table 4).

Variable	Frequency (n=260)	Percentage (%)		
Parity				
0	69	26.5%		
1-4	185	71.2%		
≥ 5	6	2.3%		
	Antenatal visits			
Yes	249	95.8%		
No	11	4.2%		
Antenatal visits				
<4	110	42.3%		
≥ 4	150	57.7%		
Time to the nearest health facility				
2 hours or less	235	90.4%		
More than 2 hours	4	1.5%		
I don't know	21	8.1%		

The majority of the study participants have the awareness of birth preparedness 242(93.1%). Almost all of them got information from health workers 229(88.1%). Others 12.13%, 3.1%, 1.5%, 0.8% and 0.8% got information from family/friends, mass media e.g. radio newspaper etc. seminars/workshops, Internet and school respectively.

In addition, virtually all the mothers 242(93.1%) will go to the clinic in case of an emergency, 8(3.1%) will call for help, 3(1.2%) will inform their doctor, 4 (1.5%) don't know what to do in case of emergency. One (0.4%) will call their husband, call their neighbour and will invite God into their situation respectively (Table 5).

 
 Table 5. Respondent's awareness, source of information on obstetric danger signs and what respondents do in case of emergency

Variable	Frequency (n=260)	Percentage (%)		
Awareness				
Yes	242	93.1%		
No	18	6.9%		
Source	ce of information			
Health workers	229	88.1%		
Family and friends	32	12.13%		
Mass media	8	3.1%		
Seminars/workshops	4	1.5%		
Books	2	0.8%		
Internet	2	0.8%		
School	2	0.8%		
The action wa	The action was taken during emergency			
Go to the clinic	242	93.1%		
Call for help	8	3.1%		
Don't know	4	1.5%		
Inform my doctor	3	1.2%		
Call my husband	1	0.4%		
Call neighbour	1	0.4%		
Invite God into my situation	1	0.4%		

The majority 224 (86.2%) selected a place for the birth of their child. A greater percentage recognises the onset of labour 233 (89.6%). The birth preparedness plan was understood by 219(84.2%) participants. Danger signs were recognised by 221(85.0%). Complication readiness plan was understood by 125(48.1%), 209(80.4%) chose the healthcare provider in case of an emergency, 174(66.9%) stay close to their healthcare provider and 242(93.1%) knows the transportation systems on how to get to the health facility in case of an emergency. Also, 155(59.6%) have personal savings that they can access in case of an emergency. Only 63 of the respondents (24.2%) have identified a blood donor in case of an emergency while a whole lot of 197(75.8%) had not (Table 6).

Table 6. Practices birth preparedness and complication readiness

Variable	Yes	No
Frequency (%)		
Selected a place for the birth of your child	224 (86.2%)	36 (13.8%)
Able to recognize the onset of labour	233 (89.6%)	27 (10.4%)
Have knowledge of birth preparedness plan	219 (84.2%)	41 (15.8%)
Able to recognize danger signs	221 (85.0%)	39 (15.0%)
Knowledge of the complication readiness plan	125 (48.1%)	135 (51.9%)
A chosen healthcare provider in case of an emergency	209 (80.4%)	51 (19.6%)
Proximity to health care provider	174 (66.9%)	86 (33.1%)
Acquainted with the transportation system	242 (93.1%)	18 (6.9%)
Own personal savings in case of an emergency	155 (59.6%)	105 (40.4%)
Able to identify a blood donor in case of an emergency	63 (24.2%)	197 (75.8%)

The majority of the study participants 197 (75.8%) were not prepared for birth and not ready for complications while 63 (24.2%) were prepared (Table 7).

Table 7. Birth preparedness and complication readiness; overall attitude category during pregnancy among mothers in Yenagoa

Overall birth preparedness and complication readiness category	Number (n=260)	Percentage (%)
Prepared	63	24.2%
Not prepared	197	75.8%

#### Discussion

This study showed that the majority of the study participants have the awareness of birth preparedness (93.1%), but only a small proportion of the respondents were prepared for birth and its complication (24.2%). The finding is not in agreement with the result of the study done in rural Uganda, Mbarara district [11]. On the other hand, the result is almost consistent with another study done among pregnant women in Aleta Wondo Woreda, Sidama zone, Southern Ethiopia[14]. Besides, it is slightly in agreement with the finding of a study conducted in Adigrat town, North Ethiopia[15]. The difference with the finding of the study done in rural Uganda, Mbarara district could be unlike the current study, in the former study there was a mixture of study subjects were pregnant women in addition to women who gave birth in the last 12 months were considered. So, pregnant women might tell their future plans rather than what they have actually performed. On top of this, the majority of the respondent in rural Uganda, Mbarara district attended ANC for four and more visits where they could have more opportunities to get information concerning birth preparedness and complication readiness than in the current study subject where only a few women attended four and more ANC visit. The most commonly selected practice in the study was identifying a place of delivery (86.2%), able to recognise the onset of labour (89.6%), able to recognise danger signs (85.0%), choosing a health provider in case of an emergency (80.4%), proximity to the health centre (66.9%), acquainted with transportation system (93.1%), owing personal savings in case of an emergency (59.6%) which may be explained by the fact that both women and their partners know that money is required to facilitate referral in case of complications, able to identify a blood donor in case of an emergency. It is nearly comparable with a community-based study in rural Uganda, Mbarara district where the majority of the respondents identified a skilled provider, saved money, identified means of transport, and bought delivery kits/birth materials during their most recent pregnancy [11].

Contrary to the practice of BP/CR among women, only a small number, 63 (24.2%), of study participants were knowledgeable about birth preparedness and complication readiness. The implication of this finding could be women could practice some of those BP/CR components without having the knowledge of its rationale. Therefore, their continuous practice in the future is under question because of their knowledge gap.

#### Conclusion

Findings from this study showed that only a small number of respondents were found to be prepared for birth and its complications.

#### References

- Kuruvilla, S., et al. "The Global strategy for women's, children's and adolescents' health (2016–2030): a roadmap based on evidence and country experience." Bull World Health Organ 94.5 (2016): 398.
- Jonathan, H.G.E., & Stoltenberg, J.H. "UN commission on life-saving commodities for women and children." N Y: UN (2012).
- 3. Child, Every Women Every. "Saving lives protecting futures." (2015).
- Requejo, J., et al. "Fulfilling the health agenda for women and children: the 2014 report." Geneva: U N Child Fund World Health Organ (2014).
- Campbell, D.A. "An update on the United Nations millennium development goals." J Obstet Gynecol Neonatal Nurs 46.3 (2017): e48-e55.

- World Health Organization. "Trends in maternal mortality: 1990 to 2013: estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division: executive summary." World Health Organ 2014.
- 7. UNICEF. "Levels and trends in child mortality." N Y: UNICEF 2 (2015): 15.
- World Health Organization. "Health for the world's adolescents: a second chance in the second decade: summary." World Health Organ 2014.
- Markos, D., & Bogale, D. "Birth preparedness and complication readiness among women of childbearing age group in Goba woreda, Oromia region, Ethiopia." BMC pregnancy childbirth 14.1 (2014): 1-9.
- Moran, A.C., et al. "Birth-preparedness for maternal health: findings from Koupéla district, Burkina Faso." J health popul nutr 24.4 (2006): 489.
- Kabakyenga, J.K., et al. "Knowledge of obstetric danger signs and birth preparedness practices among women in rural Uganda." *Reprod health* 8.1 (2011): 1-10.
- 12. Cochran W.G. "Sampling Techniques." J Appl Math Mech1963; 43(10-11): 519.
- Shobo, O.G., et al. "Knowledge of obstetric danger signs amongst women of reproductive age in PATHS2 Zaria cluster, Kaduna Nigeria." Niger J Med 23.1 (2014): 26-32.
- Hailu, M., et al. "Birth preparedness and complication readiness among pregnant women in Southern Ethiopia." *PloS one* 6.6 (2011): e21432.
- Hiluf, M., & Fantahun, M. "Birth preparedness and complication readiness among women in Adigrat town, north Ethiopia." *Ethiop J Health Dev* 22.1 (2008): 14-20.