Report on Qualitative Assessment of Community Knowledge, Perceptions, Practices, and Barriers to Malaria Prevention Services for Pregnant Women in Zamfara and Kebbi States, Nigeria

By

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Acronyms

ANC	Antenatal care
IPTp	Intermittent Preventive Treatment for pregnant women
NDHS	Nigeria Demographic and Health Survey
DOT	Directly Observed Therapy
FGD	Focus Group Discussion
KII	Key Informant Interview
LGA	Local Government Area
LLIN	Long Lasting Insecticidal Net
M&E	Monitoring & Evaluation
MAPS	Malaria Action Program for States
MCH	Maternal and Child Health
MiP	Malaria in Pregnancy
MNCH	Maternal Neonatal and Child Health
NMEP	National Malaria Elimination Program
PHC	Primary Health Care
PMI	President's Malaria Initiative
RBM	Roll back Malaria
RH	Reproductive Health
SBCC	Strategic Behavior Change Communication
SMEP	State Malaria Elimination Programme
SMoH	State Ministry of Health
SP	Sulfadoxine-Pyrimethamine
WDC	Ward Development Committee

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Executive Summary

Introduction: Evidence showed that North West region of Nigeria, where Zamfara and Kebbi states are located, has one of the poorest coverage of malaria prevention, and low uptake of antenatal care (ANC) in the country. Statistics showed that only 5% of pregnant women aged 15-49 slept under a mosquito net in 2003 and this figure appreciated by only 12.4% in 10 years, to 17.4% in 2013 (NDHS 2003; 2013). Likewise, 36.9% of pregnant women used ANC in 2003, and this increased marginally to 41% in 2013.

This study therefore, is a baseline qualitative assessment of the knowledge, perceptions, practices, and barriers to malaria prevention, and ANC uptake among pregnant women in Kebbi and Zamfara states. This is with a view to providing additional information for program intervention geared to improve malaria prevention measures, and ANC uptake in the two states.

Methodology: This study is underpinned by phenomenological principles and procedures providing insights and depth on study questions based on; (1) triangulation of data collection techniques and textual data, (2) frequencies, similarities, and convergence of key words/concepts, and (3) emerging themes based on family of words/concepts. Twenty-four focus group discussions (FGDs), 12 per state, and 28 key informant interviews (KIIs), 14 per state were conducted among a range of stakeholders including; pregnant women using or not using ANC, women of reproductive age, men, community/religious leaders, and health workers/other stakeholders.

Key findings & conclusions from Zamfara State

- Knowledge of the causes of fever and malaria fever was high among the study participants, and they were quite disposed to going for diagnostic test. Key causes of malaria fever based on the convergence of indicative words/concepts used by study participants were mosquito bites, lack of mosquito nets, dirty environment, and standing water/gutter. Program intervention efforts need to focus on addressing each of the causes, which will eventually strengthen preventive efforts in the state. In addition, programming should provide communication platforms for providing correct information on sign and symptoms that are bases for doing diagnostic tests, and thus, treatment for those infected by malaria in the state.

- Results showed that risk perceptions about the danger of malaria fever and its prevention was not high among pregnant women, and the information and knowledge bases for this to happen was quite weak. The results were based on the ordering of the most common words/concepts used by the study participants suggesting a general lack of good appreciation of the danger of malaria among pregnant women. Most common words/concepts indicative of danger of malaria mentioned were anemia, abortion/miscarriage, death, child/fetus disability, and bleeding among others. These danger signals indicated by study participants need reordering to bring into sharp focus, risk perception which is a precursor of self-efficacy to adopt preventive measures i.e. use

of mosquito net, personal hygiene and environmental sanitation, ANC attendance, and drug use among others.

- Findings suggest obvious disparity between where pregnant women can access modern health facilities and where they give birth. This disparity may be due to challenges and barrier to health services such as poverty/no money, attitude of health workers, distance/mobility difficulties, husbands' lack of financial and moral support, and lack of mosquito nets. Program intervention will need to address each of these challenges on their own merit and deal with them based on their influence in each of the communities studied.

- Results of this study suggest that sources and preferred sources of health information were not well synchronized for effectiveness in reaching the study population and impact on their behaviors. Sources of health information mentioned were radio, town announcer, health worker, and community/religious leader based on convergence of words/concepts, whereas preferred sources of health information where health worker, town announcer, community outreach, radio, community/religious leader in that order of importance. Programming will need to eliminate these gaps in platforms of communication by proportionately distributing information based on preferred sources of information and target reach, which may have better penetration and impact on the communities.

- Findings suggest that women take the initial steps to attend ANC but this may be short-lived without tacit approval from their husbands to ensure continuous visits throughout the life of the pregnancy. Program intervention need to tackle this challenge by designing strategies both for men and for women simultaneously to ensure that motivated women use ANC with support from their husbands.

Key findings & conclusions from Kebbi state

- Results of this study suggest that information and knowledge about causes of malaria were quite high, as well as those about diagnostic test, signs and symptoms. Key words/concepts indicative of knowledge about causes of malaria were stagnant water/gutters, mosquito bites, poor hygiene, and dirty environment that are mostly breeding platforms for malaria infection in the studied communities. Key words/concepts commonly used for signs and symptoms were shivering/fever, nausea/vomiting, headache, high body temperature, and abdominal/body pain etc. Program intervention should tailor strategies to change behavior of the studied communities to create fewer platforms for breeding mosquito and increase use of mosquito nets among them. Likewise, increased knowledge about the correct signs and symptoms will enable quick diagnoses, treatment and cure.

- Study results suggest that risk perceptions about malaria infection is high among the study population but these need to fully translate to reduction in the occurrence of the disease. Dangers of malaria fever mostly mentioned by study participants were death/still

birth, anemia, low birth weight, lack of visit to health facility, and lack of nutrients among others. These key words/concepts indicative of danger of malaria should be strengthened while not too obvious dangers like lack of nutrients, and lack of visits to health facilities should be clearly explained to establish the linkages necessary. Increased risk perception is likely to lead to self-efficacy to take action, and thus create critical mass of the studied population that will propel radical change in behavior to minimize malaria infection in the state.

- This study shows obvious differences between where pregnant women can receive health care, and were they give birth. Whereas pregnant women know that they can receive care at the hospitals/health facilities, many choose to give birth at home with the TBA in attendance. Part of the reasons for this disparity, based on convergence of common words/concepts, may be lack of money, household/husband's disapproval, lack of doctors at the health facilities, distance/transportation, attitudes of health workers, and carelessness/illiteracy, shame, and cultural beliefs. Program intervention would need to tease out the practical details of each of the barriers in order to find lasting solutions to them.

- Evidence of this study suggests obvious gaps between sources of health information, and preferred sources of information on malaria. Key words/concepts indicative of sources of health information were; town announcer, radio, religious/community leader, television, and community health worker. Preferred sources of malaria information mentioned by study participants were; hospital/health workers, pregnant women, town announcer, and radio. These gaps in information exchange can be eliminated through deliberate programming efforts geared to make the preferred sources of information the main source of health information to the studied population.

- Study results suggest that head of households/husbands were the main decision maker on pregnant women's ANC attendance. This result was indicative of the overwhelming convergence of key words/concepts on head of household, followed by father/mother in-laws. Program intervention should have strong male elements and ownership through participatory approaches geared to elicit their full support in pregnant women's ANC attendance.

1. Introduction

Malaria prevalence is high and endemic in Nigeria.[1] *Plasmodium falciparum* parasite transmitted by anopheles, a special mosquito of the tropics, is responsible for the majority of malaria deaths in Nigeria, as in most endemic countries in sub-Saharan Africa.[2,3] Malaria is a major cause of pregnancy complications, miscarriage, stillbirths, low birth weight and neonatal mortality.[2,4]

Although evidence showed that in the past 5 years, use of mosquito nets and other preventive measures increased substantially in the country. Evidence also showed disproportionate access and use across age, sex, residence, and educational characteristics of the population.[5,6] Percentage of household with at least one mosquito net increased from 17% in 2008 to 50% in 2013. [5,6] In 2008, ownership of mosquito net increased from 14.1% in the urban areas to 48.2% in 2013, and in rural areas, increases were from 18.5% to 60.7% within the same time frame.[5,6]

Women in Nigeria, especially those pregnant, are disadvantaged in terms of malaria preventive measures. Pregnant women exposed to malaria parasite are at risk of reproductive health complications including miscarriage, spontaneous abortion, stillbirth, and low birth weight and even death.[5]

1.1 Exposure & Risk of Malaria among Pregnant Women

Over the past 10 years or more, percent of pregnant women who slept under mosquito nets did not appreciate considerably despite significant increases in household ownership and use. NDHS statistics showed that pregnant women use of mosquito net (an indicator of malaria prevention) was below 20% in the period, i.e. only 5.6% in 2003, 11.8% in 2008, and 17.8% in 2013. These low and persistent levels of mosquito net use suggest high risk of exposure of the majority of pregnant women in the country to malaria parasite, and sickness from the disease.

In the North West region of Nigeria, only 5% of pregnant women aged 15-49 slept under a mosquito net the night before the NDHS survey of 2003, and in 2008, and 2013, the figures were 12.4%, and 17.4% respectively. Also, 2013 NDHS showed that only 29% of pregnant women in Kebbi state aged 15-49 slept under mosquito net, and in Zamfara state only 12.1% did.[6] This national scenario replicates itself at the regional and the state level as well, and corroborate high risk of exposure of pregnant women to malaria parasite in the region, and the two states.

1.2 Use of Antenatal Care among Pregnant Women

Antenatal care (ANC) is a vital platform for monitoring and reducing reproductive health challenges, including those resulting from malaria infection among pregnant women.[4,7,8] Despite the importance of ANC as a veritable platform for the reduction, and elimination of reproductive health challenges for pregnant women, evidence showed that use of ANC have plateaued over the years. Percentage of Nigeria pregnant women aged 15-49 who used antenatal care was 68% in 1999, but declined thereafter, within the margin of error, to 63.1%, 64%, and 66% in 2003, 2008, and 2013 respectively.

Evidence shows that ANC services from skilled provider also plateaued for the same periods. Figures from 1999 NDHS showed that 63.6% of pregnant women aged 15-49, used ANC services from skilled provider compared to 58%, 57.7%, and 60.6% in 2003, 2008, and 2013 respectively. [3,4,5,6] Also, evidence showed that use of skilled ANC services has been consistently lowest over the years in the North West region (where Kebbi and Zamfara states are located) compared to other regions of the country. The 1999 NDHS reported 28.3% pregnant women aged 15-49 used ANC services from skilled provider; the figure was 36.9% in 2003, 31, 1% in 2008, and 41% in 2013. Low use of skilled ANC provider makes pregnant women in the region more vulnerable to malaria parasite, and increases the likelihood of morbidity and mortality.

The evidence that the North West has the lowest in-take of ANC over the past 10 years running, and the fact that the region also has the lowest skilled ANC providers makes Zamfara, and Kebbi states well suited for this study.

2. Baseline Assessment Objectives

2.1 Broad Objective

Conduct a baseline qualitative assessment on the knowledge, perceptions, practices, and constraints to malaria prevention, and ANC uptake among pregnant women in Kebbi and Zamfara states.

2.2 Specific Objectives

- To assess knowledge, perceptions, and practices with respect to malaria prevention and how these affect uptake of malaria prevention services including use of SP among pregnant women in Kebbi and Zamfara states.

- To examine the barriers, and challenges to pregnant women's use of ANC and malaria prevention services in Zamfara and Kebbi states, and solutions to these barriers and challenges.

- To examine factors influencing health-seeking behaviors among pregnant women at the community level in Kebbi and Zamfara states.

3. Research Questions

- What are the community's knowledge, perception, and practices with respect to malaria prevention?

- What are the barriers to uptake of ANC and malaria prevention services among pregnant women in the community?

- Where do pregnant women access antenatal care? What is the content of care and what influences the choice of antenatal care provider?

- How does the influence of men/district heads affect pregnant women's accessing good antenatal care and malaria prevention services?

- Are there other influencers apart from the men/district heads that can bring about positive behavior change with respect to improved uptake of malaria prevention intervention among pregnant women within the community if convinced?

- What methods are currently been used to prevent malaria in the community particularly among pregnant women?

- Will the pregnant women accept SP if delivered through other channels other than ANC?

- What channels will the women prefer SP to be delivered? What is their perception about the use of outreaches to deliver SP?

4. Research Methodology

This community study employed mainly qualitative methodology premised on phenomenological principles and procedures studying nature or meanings of lived experience through contextualization and understanding of key words and concepts.[9, 10] Aspects of the methodology employed in this study is triangulation embedded throughout the research process, right from data collection tools content, and data collection techniques to reporting of findings. For instance, triangulation at the fieldwork stage involved using different data collection instruments and procedures to obtain diverse information from different levels of stakeholders, using different types of data collection techniques including focus group discussion (FGD), Key informant interview (KII), and observation.

Table 1 shows the different levels of stakeholders that provided information in the two states, and the types of data collection techniques employed in eliciting the information. In total, 24 FGDs, 12 per state, and 28 KIIs, 14 per state, were conducted. FGD was employed mainly to elicit information at the community level, except for religious and community leaders where KII was used. In addition, KII was used for program implementers i.e. health workers, and state health coordinators.

All FGDs had maximum eight participants per session, and data collection elicited included demographic characteristics i.e. state, local government authority (LGA), ward, town/village, age and level of education. Thematic areas covered at each FGD session are; knowledge, awareness, perception, and practices about malaria, utilization of ANC and malaria prevention services, types of health care services available in the communities, and sources of information on health services, and influences on decision making. KII sessions covered similar thematic areas in

addition to policy context information obtained from government program and policy implementers.

Table 1: Showing numbers of focus group discussions and key informant interviews conducted and the key Study participants			
Type of Stakeholders	**Zamfara**	**Kebbi**	**TOTAL**
1. Pregnant women using ANC	FGD = 3	FGD = 3	FGD = 6
2. Pregnant women not using ANC	FGD = 3	FGD = 3	FGD = 6
3. Women of reproductive age	FGD = 3	FGD = 3	FGD = 6
4. Men	FGD = 3	FGD = 3	FGD = 6
5. Community leader/Religious Leader	KII = 6	KII = 6	KII = 12
6. Health worker/other stakeholders	KII = 8	KII = 8	KII = 16
TOTAL	**FGD = 12 KII = 14**	**FGD = 12 KII = 14**	**FGD = 24 KII = 28**

4.1 Data Quality Assessment Methods

The quality of data collected was assessed mainly using response rate techniques. Table 2 below presents data-coding matrix developed to capture key words and concepts in textual data. The data capture matrix is for a sub-group, and each cell represent frequency of words and concepts from responses on each question or item asked in the discussion/interview guideline. Quality assessment for this study was done by simply counting empty cells in the data matrix, divided by the total cells in the matrix, and multiplied by 100%. Therefore, response rate for the data collected is 100% minus the percentage of empty cells calculated.

Empty cells represent situations where there are no words or concepts in the textual data to capture the question/s in the guideline. Empty cells may be due to one or more of the following: (1) interviewer did not ask the right question/s in the guidelines, (2) interviewer skipped a given question knowingly or unknowingly, (3) interviewee did not respond to a given question knowingly or unknowingly, (4) follow-up probing was not done, or was not skillfully implemented.

Table 2: Example of data capture quality assessment matrix			
	LGA_1	LGA_2	LGA_3
$Item_1$	X_{11}	X_{12}	X_{13}
$Item_2$	X_{21}	X_{22}	X_{23}

$Item_3$	X_{31}	X_{32}	X_{33}
$Item_4$	X_{41}	X_{42}	X_{43}
$Item_5$	X_{51}	X_{52}	X_{53}

Aside response rate, quality assessment of qualitative data also includes richness or depth in responses, and appropriateness of words and concepts in providing insight on the questions asked. These components of quality assessment parameters were not applied in this study.

4.1.1 Zamfara State Data Quality Assessment

Total data cells for each sub-groups in Table 1 ranged from 60 for men in the community to 96 for health worker/other stakeholders. Overall quality of the data collected in Zamfara state, using only response rate, is 84 (total empty cells) divided by 417 (total of all cells for each sub-group) multiplied by 100, which equals 20% minus 100% to obtain 80% response rate to the questions asked from the qualitative guidelines used. The response rate per sub-group are as follows: pregnant women using ANC = 79%, pregnant women not using ANC = 88%, women of reproductive age = 89%, men = 71%, community/religious leader = 93%, and health worker/other stakeholder = 77%.

As earlier mentioned, richness and quality of response for each cell was not captured by this assessment of quality. The quality of data collected in Zamfara state may substantially reduce if these other parameters of quality are applied.

4.1.2 Kebbi State Data Quality Assessment

In Table 1, sum of data cells for sub-groups in Kebbi state range from 57 for men to 96 for health worker/other stakeholder. Overall quality of the data collected in is 71 (total empty cells) divided by 417 (total for all sub-groups) multiplied by 100, which equals 17% minus 100% to obtain 83% response rate to the questions asked based on the qualitative instruments employed. The highest response rate was reported for women of reproductive age (95%), followed by pregnant women using ANC (94%), pregnant women not using ANC (91%), community/religious leader (84%), men (82%), and health worker/other stakeholder (60%).

If the data in Kebbi state is subjected to other parameters such as richness in responses, and appropriateness of words and concepts, the data sets are likely to be of better quality than that of Zamfara state in general.

4.2 Data Analysis

Data analysis began with data transcription and editing of the transcribed data to improve on the content of the information collected. Edited data were coded based on phenomenological

principles, which provides insights on contextual meanings of words and concepts, and their frequencies of occurrence during textual analysis. Frequencies of words and concepts during FGD and KII sessions suggest intensity or extent of importance in relation to the thematic area/s covered during the data collection sessions.

Data analysis included identifying similarities and convergence in words and concepts thus, forming family of words and concepts and emerging themes, which provide insights on the issues investigated. Key words and concepts were summarized in tables and presented in bar and pie charts based on similarities and convergence to provide deeper understanding of the issues investigated. Findings from data analyses were supported by relevant quotes to strengthen the results as necessary.

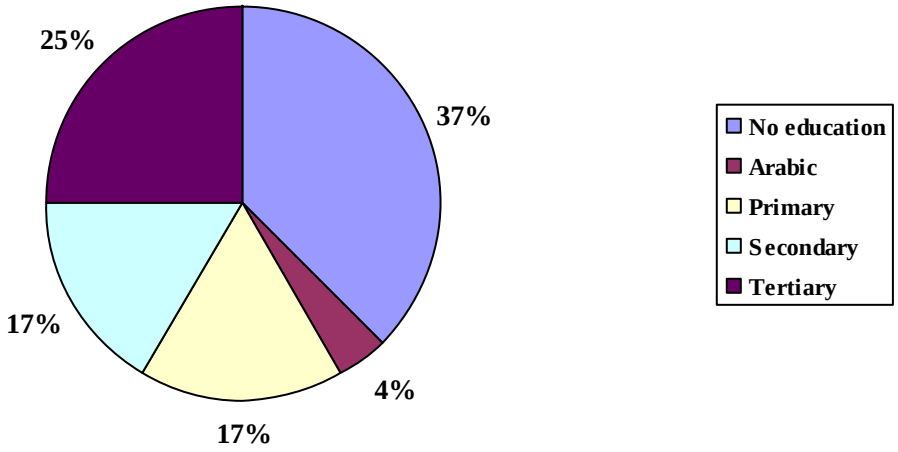
5. Results of Zamfara State Assessment

This section discusses study results based on responses by key stakeholders from Gusau, Kaura Namoda, and Talata Mafara LGAs. Findings are presented according to the thematic areas outlined for the study.

5.1 Background Characteristics of Zamfara State Qualitative Study Participants

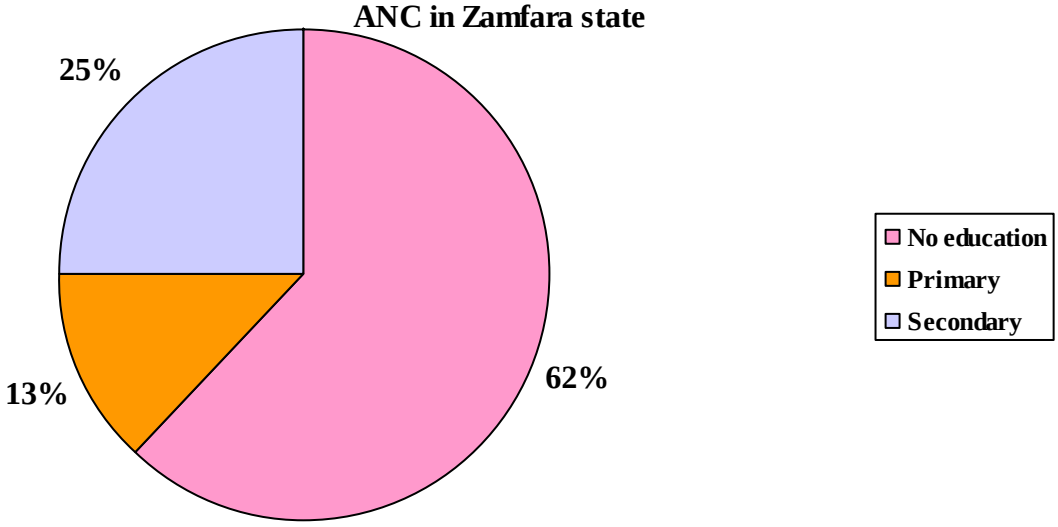
5.1.1 Characteristics of Zamfara pregnant women using ANC: Twenty-four women aged 18 to 33 using ANC participated in the study in Zamfara state. Figure 1 shows that of these, 37% had no education, 25% had tertiary education, 17% had both primary and secondary education respectively, and 4% had Arabic education.

Figure 1: Showing level of education for pregnant women using ANC in Zamfara state



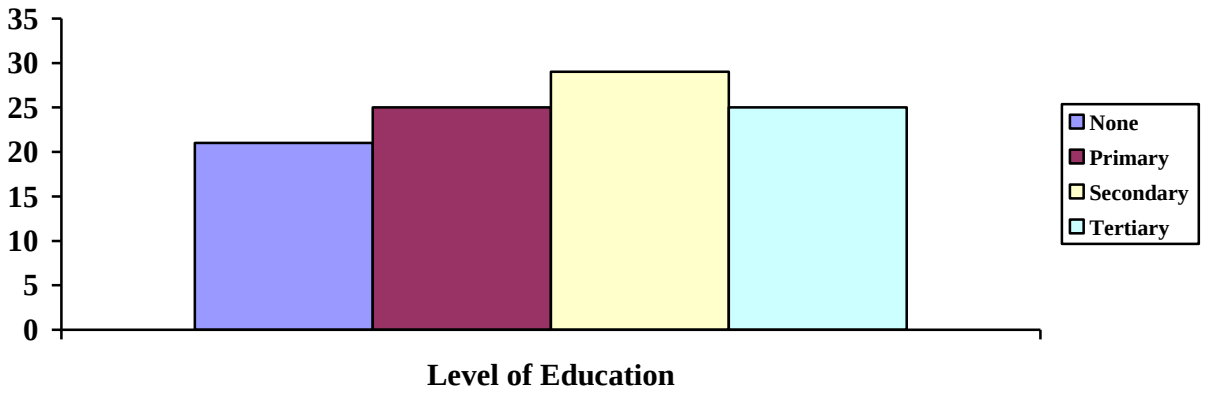
5.1.2 Characteristics of Zamfara women not using ANC: Also, 24 women who were not using ANC (Figure 2) participated in the study and of these, the majority (62%) had no formal education, 25% had secondary, and 13% had primary education.

Figure 2: Showing level of education for pregnant women not using ANC in Zamfara state



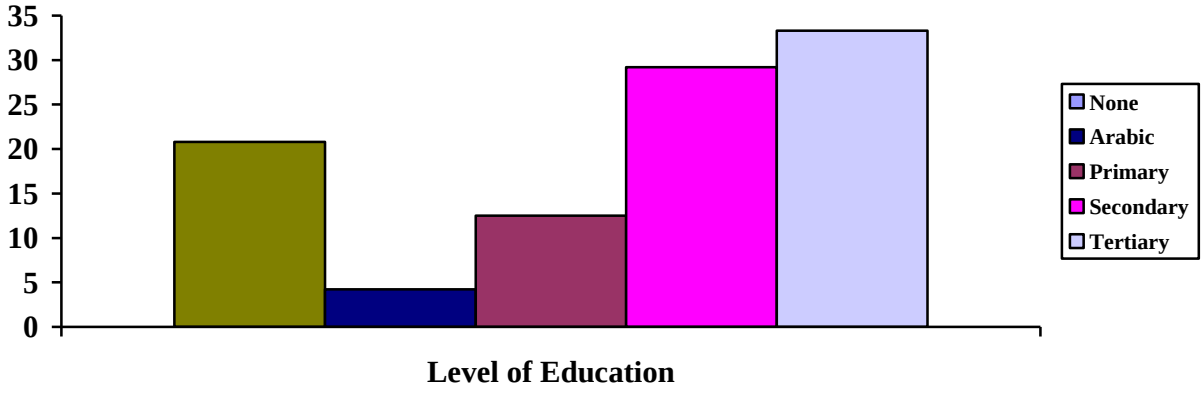
5.1.3 Characteristics of Zamfara women of reproductive age: In total, 24 women aged 18 to 49 participated in the FGD conducted in Gusau, Kaura Namoda, and Talata Mafara LGAs. Figure 3 shows that these women were fairly distributed across educational levels with 29% having secondary education, 25% both primary and tertiary respectively, and 21% had no education.

Figure 3: Education status of Zamfara state women of reproductive age



5.1.4 Characteristics of Zamfara Men: Twenty-four men aged between 35 and 65, 8 per LGA participated in the FGD conducted in the state. Figure 4 shows that a third of the men (33%) had tertiary education, 29% had secondary, 13% had primary, 4% had Arabic education, and 21% had no formal education.

Figure 4: Education status of Zamfara men in the communities



5.1.5 Characteristics of Community/Religious Leaders: Six community/religious leaders aged between 43 and 65 participated in the KII conducted in the three LGAs. Three of the community/religious leaders who participated in the study had tertiary education, 2 had secondary education and 1 had primary education.

5.1.6 Characteristics of Health Workers/Other Stakeholders: Eight health workers/other stakeholders aged 33 to 52, 2 per LGA, paticipated in the KII conducted, and all of them had tertiary education.

5.2 Knowledge, Awareness, Perceptions, and Practices on Malaria in Zamfara State

5.2.1 Causes of fever & malaria fever in Zamfara state

This assessment examined casues of fever and malaria fever in Zamfara state with a focus on Gusau, Kaura Namoda, and Talata Mafara LGAs. The meaning of words and concepts were used to gain deeper insight on the causes of fever and malaria fever and their importance in profering solutions.

Table 2 shows that five key words/concepts were used 61 times during the discussion about causes of fever namely; mosquito bite (51%), dirty environment (16%), personal hygiene (13%), and standing water/gutter (13%).

Based on the evidence in Table 3, knowledge about malaria fever is high the studied communities in Zamfara state. Three key words/concepts were used 87 times by study participants on the causes of malaria fever in their respective communities. The most frequently used word/concept indicative of causes of malaria fever was mosquito bite/lack of mosquito net (45%), followed by dirty environmnet (29%), and standing water/gutter (26%). The combined quotes below from FGD participants on the casues of malaria fever corroborates these results.

'.....lack of taking preventive drugs against malaria such as (SP); lack of mosquito net; poor environmental sanitation; stagnant water; poor waste disposal in this community' (FGD Participants, Talata Mafara LGA, Zamfara state).

Table 3: Frequency of common words/concepts provided by study participants on causes of fever, and malaria fever

	Causes of fever	**%**	**Causes of malaria fever**	**%**
1	Mosquito bite	51	Mosquito bite/lack of mosquito net	45
2.	Dirty environment	16	Dirty environment	29
3.	Personal hygiene	13	Standing water/gutter	26
4.	Standing water/gutter	20		
	TOTAL (n = 61)	**100**	**TOTAL (n = 87)**	**100**

Note n = number of occurrence of words/concepts

Also, the results of this study suggest that study participant did not clearly distinguish between causes of fever and that of malaria fever, and there were little differences in the key words/concepts used during the discussions. Fever is most probably likened to malaria fever which may not necessarily be the end-point the disease considering that there are other types of fever.

5.2.3 Knowledge about malaria test in Zamfara state

Results of this study suggest that malaria test is well known among those who participated in this study, including women and men in the communities visited. The concept 'know about malaria test' was used at least 53 times during the FGDs and KIIs condcuted, and study participants stated that the test was good at least 43 times. Know about malaria test occurred at least 8 times in the discussion with pregnant women using ANC, and they said that the test was good 6 times. Also, the following sub-groups reported that they know about malaria test, and it was good; women of reproductive age (12 vs. 8 times), pregnant women not using ANC (6 vs. 5 times), men in the communities (7 vs. 7 times), and community/religeous leaders (9 vs. 7 times) respectively. These results implies that men and women in the communities know the importance of malaria test, but may be constrained to go for test by lack of money, distance to health facility and other factors as this study evidence suggest.

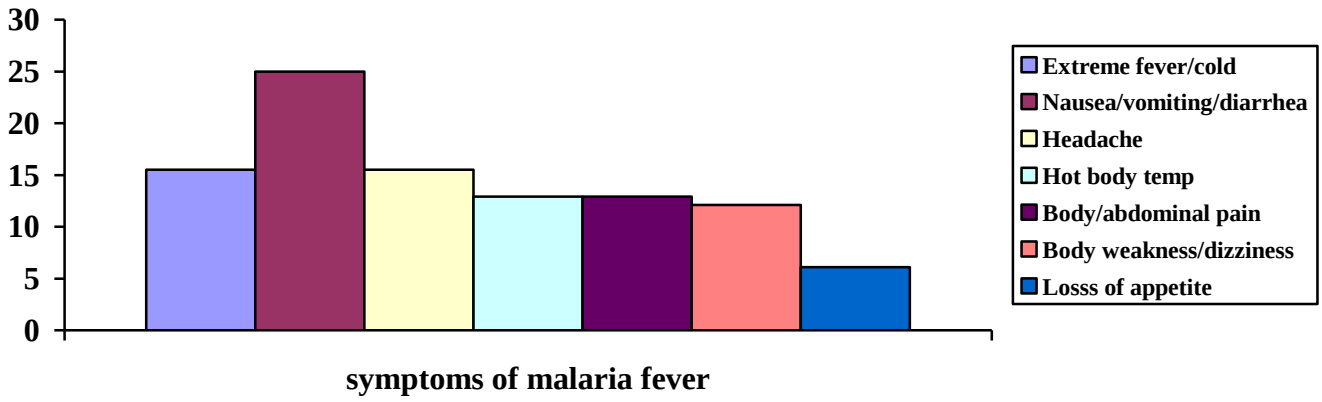
The quotes below from a KII in Zamfara state supports the findings of this study on knowledge about malaria test, and the importance of it.

'Yes, there is test being done because some people go to the hospital if the fever attack them because it begins with headache and hot body. Noticing these are the signs is what makes people to go to the hospital and get tested……. They tested me and investigated and found out that it was malaria and I was given medicines and I have used them and recovered by the grace of God. ……..This is good so that people should know, let them not feel sick and go to the chemist and be given a medicine that is not appropriate. But if they go and get tested, the illness will be known whether it is malaria fever or a different illness and that will make them take the appropriate measures.' (KII with community/religious leader, Zamfara state)

5.2.4 Knowledge about signs & symptoms of malaria in Zamfara state

Figure 5 shows cummulative frequency of signs and symptoms mentioned by study participants in Zamfara state. Key words/concepts mentioned durimg the discussions/interveiws which are indicative of signs and symptons of malaria in the study communities were; nausea/vomiting/diarrehea (25%), extreme fever/cold (15.5%), and headache (15.5%). Other key words/concepts indicative of signs and symptoms of malaria are hot body temperature (12.9%), body/abdominal pains (12.9%), body weakness/dizziness (12.1%), and loss of appetite (6.1%).

Figure 5: Percenatge distribution of Zamfara study participants by responses on signs and symptoms about malaria fever

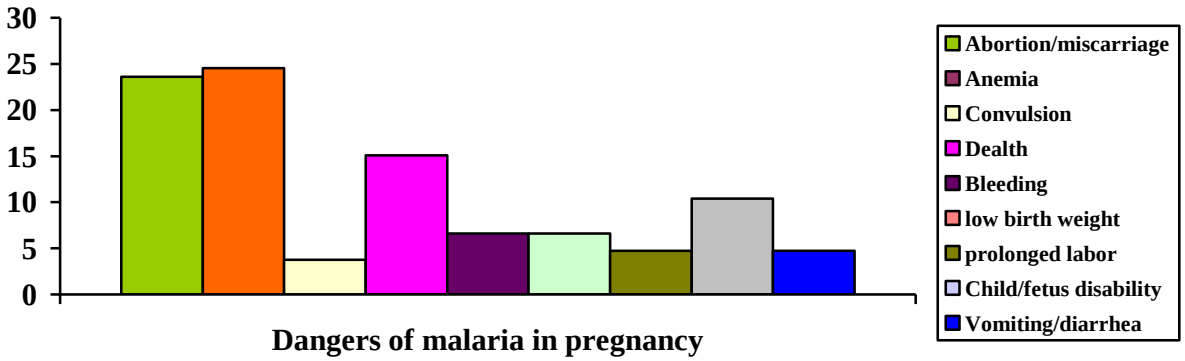


5.2.5 Dangers of malaria & prevention among pregnant women in Zamfara state

Figure 6 below shows the frequency distribution of nine key words/concepts used by study participants in Zamfara state to depict the dangers of malaria among pregnant women. The most common danger mentioned was anemia (24.5%), followed by abortion/miscarriage (23.6%), death (15.1%), child/fetus disability (10.4%), bleeding, and low birth weight both (6.6%),

prolonged labor, and vomiting/diarrhea both (4.7%), and convulsion (3.8%). These results are useful for program intervention planning especially with respect to how to strategize and position or reposition each of the causes of malaria mentioned.

Figure 6: Percenatge distribution of Zamfara study participants by responses on dangers of malaria in pregnant woman

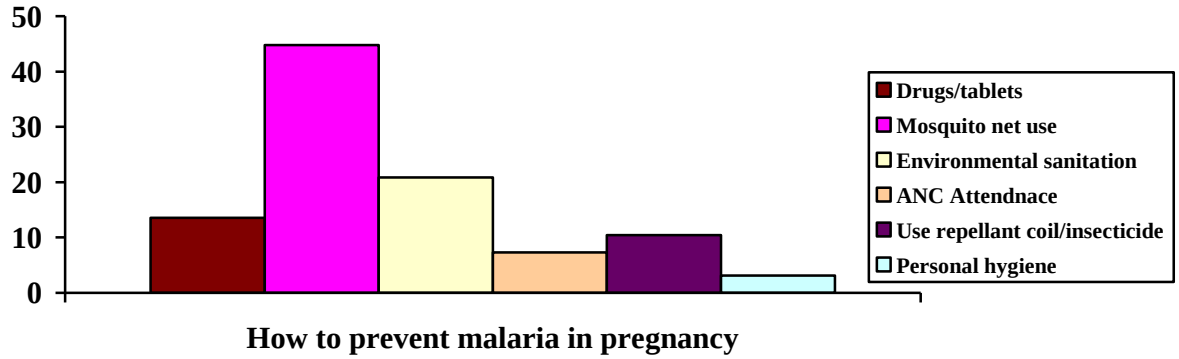


In addition, findings (Appendix III) suggest considerable variations across sub-groups especially at the community level on the dangers of malaria in pregnancy. While the most commonly used word/concept depicting danger of malaria for pregnant woman who used ANC was abortion/miscarriage, for those not using ANC it was death, and for women of reproductive age, and men the most common used word/concept was anemia. And for community/religious leader, the most commonly used word/concept suggesting danger of malaria was fetus disability. This disparity and the implications of it should be factored into programming strategies geared to achieve increased malaria prevention coverage. Also, the results of this study provide insightful information for programs to correct gaps in knowledge on dangers of malaria. The excerpts below are from an FGD with pregnant women using ANC in Zamfata state support that findings above.

'It causes anemia; weakness of the legs; it kills because it cause anemia and dehydration of the body; malaria can cause unconsciousness; malaria fever it has problem in pregnant women and children and it can kill children under age; it has so many problems particularly a pregnant women not use to attend ANC, because IPT tablets and mosquito net are given to pregnant women if they attend the ANC. The major problems (is) if pregnant women did not attend ANC but if she attend will identify malaria in pregnancy during ANC. It cause anemia to pregnant women, it cause abortion and low birth rate, it cause dehydration; It cause bleeding.'(FGD with pregnant women using ANC, Zamfara state)

In Figure 7 below, the most common words/concepts used by study participants in Zamfara state on how to prevent malaria were; use of drugs/tablets (14%), mosquito nets use (45%), environmental sanitation including cutting surrounding grass/bush and removing standing water (21%). Other most common used words/concepts indicating malaria prevention are repellant/coil/insecticide use (10%), women ANC attendance (7%), and personal hygiene (3%).

Figure 7: Percenatge distribution of Zamfara study participants according to responses on how to prevent malaria in pregnancy



Additional findings (Appendix III) from the sub-groups suggest that most common word/concept used to describe ways of preventing malaria in pregnant women was 'use of mosquito net,' except for women of reproductive age who mentioned 'use of mosquito net,' 'environmental hygiene,' and 'use of drugs' at the same frequency.

Table 4: Frequency of common words/concepts provided by study participants on danger of malaria and prevention in pregnant women

	Dangers of malaria in pregnant women	**%**	**Malaria prevention in pregnant women**	**%**
1	Anemia	25.8	Mosquito net use	44.8
2.	Abortion/miscarriage	24.8	Environmental sanitation (i.e. cutting grass/remove stagnant water)	20.8
3.	Dealth (child or mother, or both)	15.8	Use drugs/tablets	13.6
4.	Child/fetus diability	10.9	Use coil/insecticide	10.4
5.	Bleeding	6.9	Attend ANC	7.3
6.	Low birth weight	6.9	Personal hygiene	3.1
7.	Vomiting/diarrhea	4.9		
8.	Convulsion	3.9		
	TOTAL (n = 101)	**100**	**TOTAL (n = 96)**	**100**

Note n = number of occurrence of words/concepts

5.3 Utilization of Health Services in Zamfara State

5.3.1 Where pregnant women can receive care vs. where they deliver babies in Zamfara state

Questions and responses on where pregnant women can receive care, and where they give birth were limited to pregnant women, women of reproductive age, and men in the communities alone. Results showed that the majority of study participants mentioned hospital/health facility as the place where pregnant women can receive care. 'Hospital/health facility' occurred 27 times during the discussions/interviews on the issue with the study participants while 'at home' delivery option occurred 4 times. These results are in sharp contrast to those on where pregnant women actually give birth. Delivery at home came up 15 times compared to hospital/health facility, which occurred 12 times. According to the evidence, birth delivery is usually by TBAs who were invited by the pregnant women to their homes. These results suggest that home is used more often than hospitals/health facility to give birth in the communities studied. These contrasting results suggest programming gaps that should be tackled to increase intake of ANC in the state.

5.3.2 Type of care at health facility in Zamfara state

Figure 8: Percenatge frequency distribution of Zamfara study participants according to responses on type of care at health facility

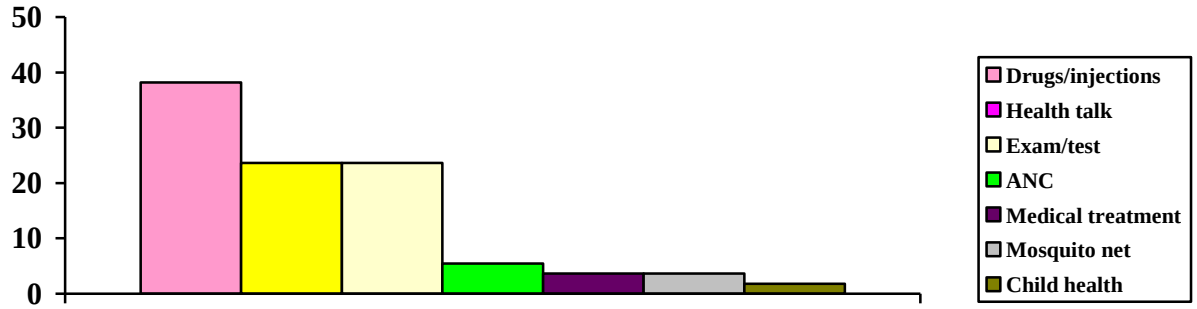
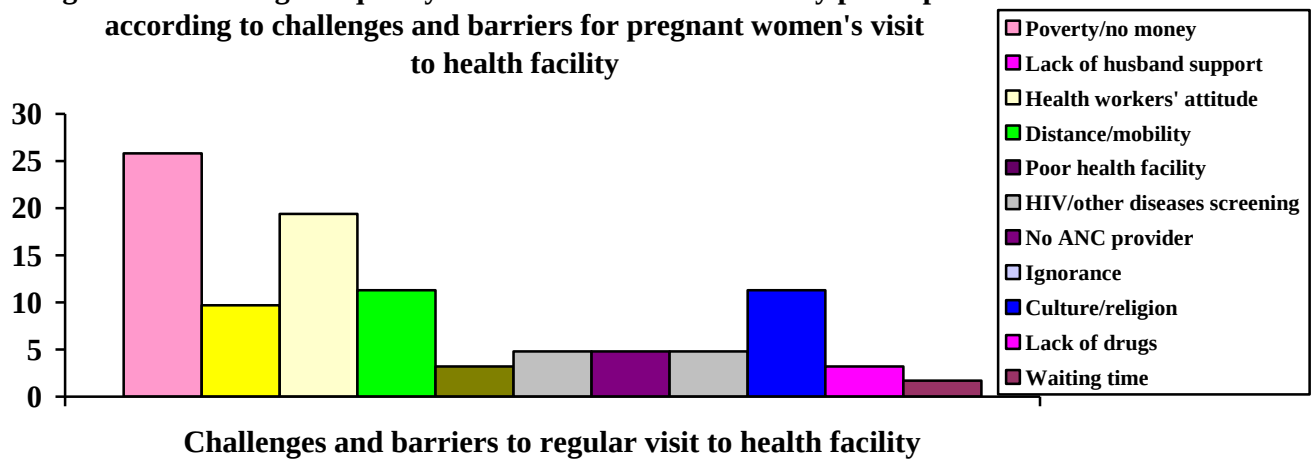


Figure 8 depicts responses of study participants on the types of services available at the health facilities in the communities. Based on the frequency of occurrence of key words/concepts in the discussion with study participants, types of care reported at hospitals/health facilities were; drugs/injections (38.2%), health talk (23.6%), examination/test (23.6%), and ANC (5.5%). Other types of services were; medical treatment (3.6%), mosquito net (3.6%), and child health (1.8%). The frequencies of the words/concepts during the discussion clearly suggest the importance of each of the services to the study participants and these should inform programming focus aimed at increasing types of services available at the health facilities in Zamfara state.

5.3.3 Challenges and barriers to regular visit to health facility in Zamfara state

Figure 9 illustrates study participant's responses on key challenges and barriers to regular visit to health facility in Zamfara state. The three most common words/concepts mentioned by study participants is poverty/no money (25.8%), attitude of health workers (19.4%), and distance/mobility, and culture/religion (both 11.3%, respectively). These results suggest specific programming focus in order to increase health facility visits among pregnant women in the state.

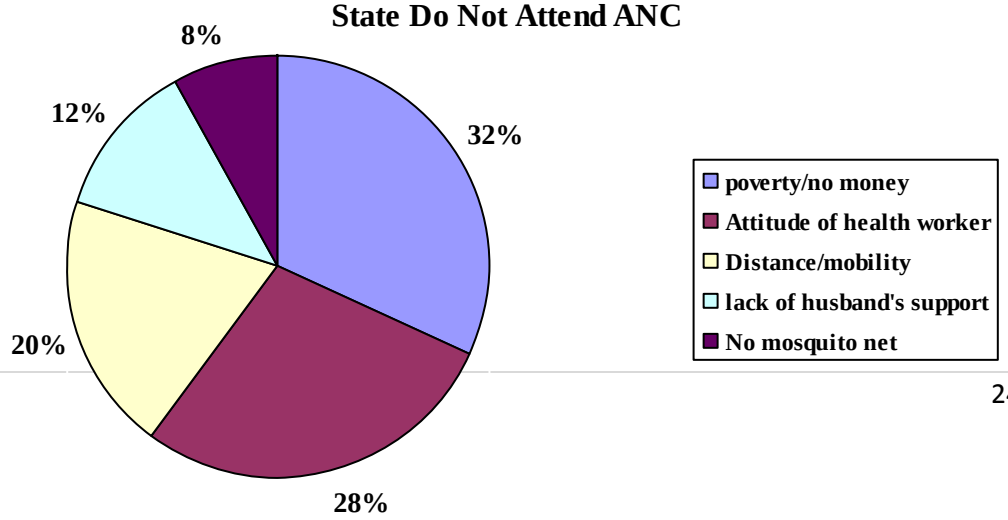
Figure 9: Percenatge frequency distribution of Zamfara study participants according to challenges and barriers for pregnant women's visit to health facility



5.3.4 Reasons pregnant women do not attend ANC in the communities in Zamfara state

Figure 10 shows the frequency of occurrence of words/concepts during the discussion with sub-groups on the reasons pregnant women in Zamfara state do not attend ANC. It is interesting to note that five most common words/concepts occurred 25 times during the data collection process. The most mentioned words/concepts were poverty/no money (32%), attitude of health worker (28%), distance/mobility (20%), lack of husband's support (12%), and no mosquito net (8%). Program intervension will need to address these issues to increase uptake of ANC among pregnant women in the state.

Figure 10: Showing Reasons Pregnant Women in Zamfara State Do Not Attend ANC



Excerpts below from an FGD with women of reproductive age (WRA) in Zamfara surmises the challenges, and reasons some pregnanat women do not use ANC.

'Lack of money; Some husbands use to disallow their families or wives; It depends on some women; Fear; Lack of mobility; Humiliation by some (health care) staff; Some (women) are afraid weather if they have other diseases.' (FGD with WRA, Zamfara state).

5.3.5 Types of health services received by pregnant women in Zamfara state

Table 5 shows combined frequency of key words/concepts of sub-groups' responses while eliciting information on health services received by pregnant women. Four most frequently used key words/concepts in the discussion were; given drugs/injections (48.8%), mosquito nets (27.9%), and 'good character of health staff' (4.7%), while 18.6% were those who did not receive ANC services.

Table 5: Combined most frequent used words/concepts by study participants in Zamfara state according to types of services received, ways to increase ANC, and opinion about community outreach to increase pregnant women's attendance at health facility

	Health services received by pregnant women who attended ANC	**%**	**Ways to increase pregnant women's ANC attendance**	**%**	**Opinion on community outreach**	**%**
1	Given drugs/injections	48.8	Need ANC provider	34.8	Outreach supported	56
2.	Mosquito nets	27.9	Create awareness/information	17.4	Give incentive (mosquito net)	12.2
3.	No attendance	18.6	Money	21.8	Train female health workers	9.8
4.	Health staff good care/character	4.7	Mosquito nets	13	Awereness creation/health talk	12.2
5.			Good care	13	Rulers/religious leaders	9.8
	TOTAL (n = 43)	**100**	**TOTAL (n = 23)**	**100**	**TOTAL (n = 41)**	**100**

Note n = number of occurrence of words/concepts

5.3.6 Ways to increase pregnant women's ANC attendance in Zamfara state

The question on ways to increase ANC attendance (Table 5 above) was discussed with only pregnant women, and women of reproductive age at the community level. The four most common key words/concepts mentioned by these women include; the need for ANC provider (34.8%), followed by need for money (21.8%), create/awareness about ANC among women (17.4%), and provision of mosquito nets, and good care at the health facility (both 13%). These findings will be very useful for programming geared to increase uptake of ANC services in the communities where this study was conducted. These statements from a religious leader in Zamfara state corroborates some of these suggestions.

'We want the government to increase the number of health workers as well as giving them serious warning to do their work properly without minding if the person is from village or town. We also want to be attended promptly. Yes, there is shortage, they should also warn them. I could remember I unce took my wife to the hospital and the nurse ignored us until the wife of D.A. saw us and call her husband who was working there, that was how they later attended to us.'(KII with religious leader, Zamfara state)

5.2.7 Opinions on community outreaches in Zamfara state

Table 5 shows that the majority of study participnats welcome the idea of community outreach strategies to increase use of health services, particularly on ANC in the state. Most common key words/concepts reported were proposed 'outreach supported' by most study participants (56%), suggestion of 'incentives'such as mosquito net (12.2%), awareness creation/health talk (12.2%), and train female health workers (9.8%), and the involvement of rulers/religious leaders (9.8%) in the program process such as information disseminating at mosque, and championing ANC campaign among males were suggested (9.8%). The quotes below culled from FGDs with women of preproductive age, and pregnant women using ANC attest the support for community outreach.

'Yes, we will encourage women to attend outreach services ….(Interruption), they will accept outreach service all of them and encourage pregnant women in attending outreach services; and encourage them eating adequate diet.' (FGD with women of reproductive age, Zamfara)

'Extreme care are given to us during given OPV vaccine; yes well encouraging pregnant women to attend all outreach health services.' (FGD with pregnant women using ANC)

5.3 Information Sources & Influences on Decision Making in Zamfara state

5.3.1 Sources of health information in the community in Zamfara state

Results in Table 6 show that sources of health information in the community mentioned by study participants were, radio (29.3%), town announcer (28.3%), health worker (14.3%), and community leader/Imam (11.9%). Other sources of health information mentioned by the study participants were television (9.8%), pamphlets/leaflets (2.2%), publicity (2.2%), and at ceremonies (2.2%).

5.3.2 Preferred sources of information on malaria in Zamfara state

The results showed that preferred sources of health information contrasted with that on usual sources of information on malaria. In Table 6, health worker (30.5%) was the most preferred sources of information on malaria followed by town announcer (21.7%), community outreach (17.4%), radio and community leader (both 10.9%), and mobile phone (4.3%). These results are insightful in informing programs on how to design effective campaign strategy to increase uptake of malaria and ANC services in the targeted LGAs in the state.

5.3.3 Decision maker on ANC for pregnant women in Zamfara state

Results in Table 6 showed that 5 key words/concepts occurred 40 times during the discussion/interview on decision making on ANC in the communities studied. Quite unexpectedly, results showed that women are the main decision maker on ANC attendance (65%), followed by husbands (17.5%), community leader (7.5%), in-laws, and friends/neighbors (both 5%). This results may mean that women takes the first step in the decision to attend ANC but needs tacit approval for their husbands or other significant personality like their in-laws to make their visit regular for the duration of pregnancy and thereafter.

The tacit approval needed from husband maybe expressly stated with the following culled statements from KII with a sensitized community leader in Zamfara state.

'Yes, there are, but rare cases. Because truly, there is in one of my wards in Bula from where a woman came to me and told me that she was sick and pregnant, she had tried to convince her husband to he refuse to allow her to come for ANC, that she had told the immediate community leader (ward head) and he advise her to come and repot the matter to the Durumbu (district head, respondent). She told me and I sent for him but I was told that he had travelled. I decided that since it was an issue of life (saving life) and I am the one who God bestowed their responsibility on and I am the one Who will be questioned by God……. Ignorance is the leading reason. In other cases it is something related to religions somehow but there is nowhere in religion that it is said you should not go anywhere to seek for health. So, if they start pointing at religion, we will tell them about the religion, tell them about what God said and what the Prophet said and they will be convinced and understand that they were making a mistake. In some other cases, it is not the religion but pure ignorance and even in some cases, it is actually the (financial) condition, he doesn't have the means and he will say that they (in the hospital) collect money.'(KII with Community Leader, Zamfara state).

Table 6: Combined most frequent words and concepts used by study participants in Zamfara state according to sources of health information, preferred sources of information on malaria, and decision maker on ANC attendance

	Sources of health information	**%**	**Preferred sources of information on malaria**	**%**	**Decision maker on ANC attendance**	**%**
1	Radio	29.3	Health worker	30.5	Women	65
2.	Town announcer	28.3	Town announcer	21.7	Husband	17.5
3.	Health worker	14.3	Outreaches	17.4	Community leader	7.5
4.	Community leader/Imam	11.9	Radio	10.9	In-laws	5
5.	Television	9.8	Community leader	10.9	Friends/neighbor	5
6.	Pamphlets/leaflets	2.2	Mobile phone	4.3		
7.	Publicity	2.2	Leaflets	4.3		
8.	Ceremony	2.2				

	TOTAL (n = 92)	**100**	**TOTAL (n = 46)**	**100**	**TOTAL (n = 40)**	**100**

Note n = number of occurrence of words/concepts

5.3.4 Strategies on ANC uptake and malaria prevention in Zamfara state

Table 7 shows frequency of words/concepts mostly used during the interveiw with health workers, and state health coordinators on strategies to improve uptake of ANC services and malaria prevention in the state. The most common key words/concepts mentioned on how to increase uptake of ANC in the state were; provide incentives such as mosquito nets (29.4%), creating more awareness/health talk in the community (29.4%), training of health workers for quality service (23.6%), and involving community/religious leaders in any activity carried out at the community level.

With respect to strategies on malaria prevention health worker/other stakeholders i.e. health coordinators most commonly used words were; clean environment/clean toilet were most commonly mentioned (25%), followed by use of multiple channels of information (20.9%), and outreach/health talk (12.5%). Other key words/concepts used during the interveiw which are indicative of strategies for malaria prevention were; need to recruit more health workers (12.5%), availability of mosquito nets (12.5%), practise of DOT (8.3%), and involving the community in programme activities (8.2%) when necessary.

Table 7: Frequency of common words/concepts provided by health workers and other stakeholders on strategies for uptake of ANC and malaria prevention services in Zamfara state

	Strategies to enable ANC in the state	**%**	**Strategies to increase malaria preventive services in the state**	**%**
1.	Give incentive (e.g. mosquito net)	29.4	Clean environment/clean toilet	25
2.	Creating awareness/health talk	29.4	Multiple channels of information	20.9
3.	Train health female health worker	23.6	Outreach/health talk	12.5
4.	Involve community/religious leaders	17.6	More health workers	12.5
5.			Availability of mosquito nets	12.5
6.			Practice DOT	8.3
7.			Involve the community	8.3
	TOTAL (n = 17)	**100**	**TOTAL (n = 87)**	**100**

Note n = number of occurrence of words/concepts

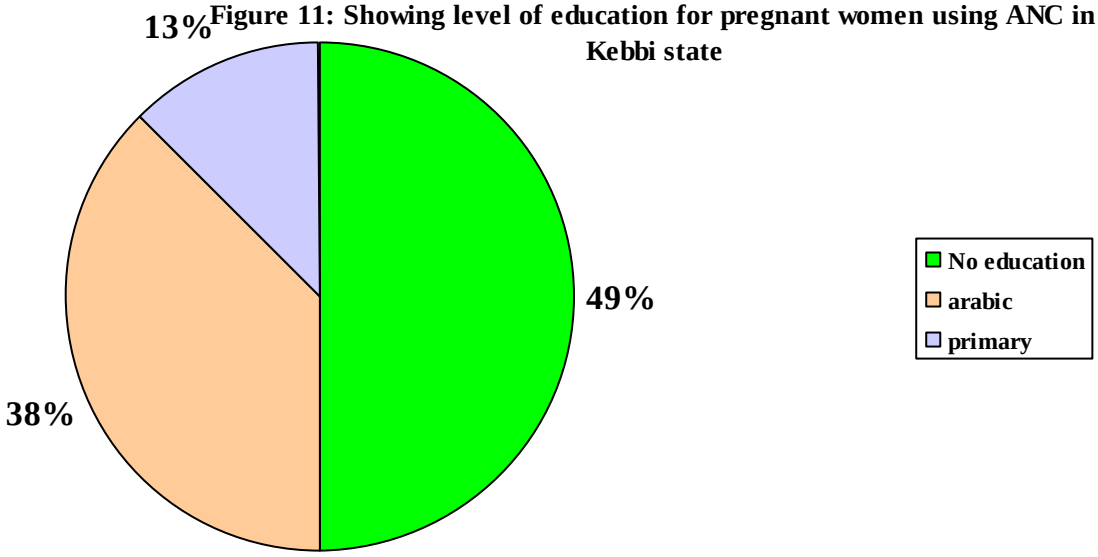
6. Results of Kebbi State Assessment

This section discusses study results based on responses by key stakeholders from Arewa, Birnin Kebbi, and Gwandu LGAs. Findings presented below starting with basic background characteristics of study participants are according key thematic areas outlined for the study.

6.1 Background Characteristics of Kebbi State Qualitative Study Participants

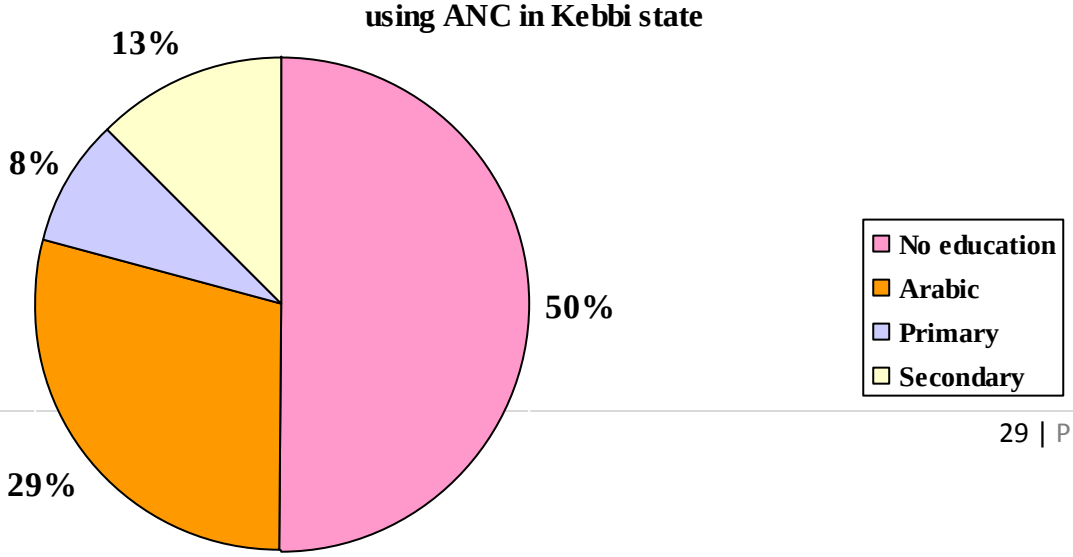
6.1.1 Characteristics of Kebbi state pregnant women using ANC: Twenty-four women aged 18 to 30 using ANC participated in this assessment study in Kebbi state. Sixteen of the 24 study participants had information on their level of education. About half (49%) of these had no education, 38% had Arabic education, and 13% primary education.

Figure 11: Showing level of education for pregnant women using ANC in Kebbi state



6.1.2 Characteristics of Kebbi state women not using ANC: Twenty-four women who were not using ANC aged between 19 to 36 participated in the study and of these, half (50%) had no

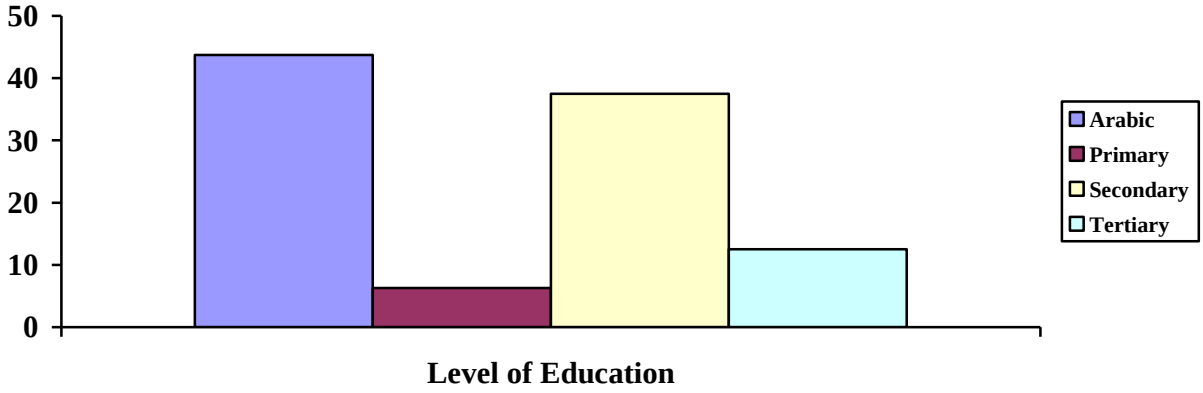
Figure 12: Showing level of education for pregnant women NOT using ANC in Kebbi state



formal education (Figure 11), 29% had Arabic education, 8% had primary education, and 13% had secondary education.

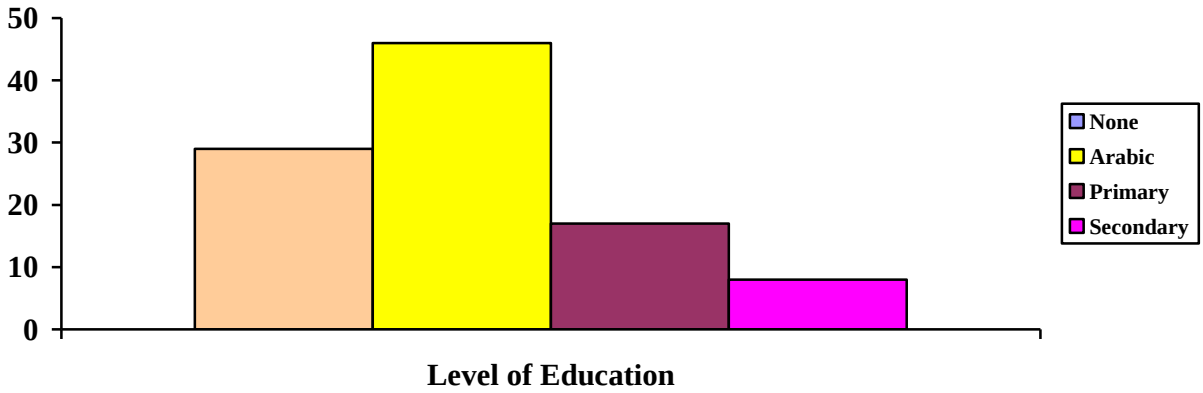
6.1.3 Characteristics of Kebbi state women of reproductive age: Sixteen of the 24 women of reproductive age, 20 to 50 years old who participated in the FGD conducted in the three LGAs in the state provided information on level of education. Of these (Figure 14), 44% had Arabic education, 6% had primary, 38% secondary, and 12% had tertiary education.

Figure 13: Education status of Kebbi state women of reproductive age



6.1.4 Characteristics of Kebbi men in the study: Twenty-four men with wide age range, 15 and 80, 8 per LGA, participated in the FGD conducted in the state. Figure 15 shows that 46% of the men who participated in the study had Arabic education, 29% had no education, 17% had primary education, and 8% had secondary education.

Figure 14: Education status of Kebbi state men in the communities



6.1.5 Characteristics of community/religious leaders in Kebbi state: Six community/religious leaders aged between 47 and 68 participated in the KII conducted in the three selected LGAs. Half (3) of the community/religious leaders in the state had Arabic education, 2 tertiary education, and one had no formal schooling.

6.2 Knowledge, Awareness, Perceptions, and Practices in Kebbi State

6.2.1 Causes of fever & malaria fever in Kebbi state

This assessment examines causes of fever and malaria fever in Kebbi state focussing on Arewa, Birnin Kebbi, and Gwandu LGAs. The contextual meaning of words and concepts are used in to gain access into the causes, danger, and preventive measures on fever and malaria fever in the state.

Table 8 below shows 8 words/concepts mentioned at least 143 times while discussing the causes of fever in the state. The most common words/concepts indicating causes of fever in the communities studied were; mosquito bite (37%), poor hygiene (25%), dirty environment (9%), and stagnant water/gutter (8%). Other causes of fever based on the most common words/concepts were; hotness/exposure to the sun (7%), none use of mosquito nets (6%), lack of visit to health facility (4%), and God knows/brings it (4%).

Table 8 also shows 8 words/concepts that were mentioned 134 times during the discussion/interveiw on causes of malaria fever in the state. The key words/concepts providing insights on causes of malaria fever in Kebbi state were; stagnant water/gutters (25%), mosquito bites (24%), poor hygiene (18%), and dirty environment (10%). Other key words/concepts suggesting causes of malaria fever in the state were, none use of mosquito nets (9%), bushes/plants around house (7%), heat/hot temperature (3%), and different insect bites (3%).

Excepts from KII with a religious leader below sums up the role stagnant water contributes to mosquito breeding and thus, in the state.

'…most likely causes of malaria fever is because of too much cold and other things like water that is stagnant in a gutter and those things are popular in this our area, and its just like this period is a mosquito period the cold is too much and see it everywhere in the gutter everywhere "see it as eve you should report it" so that mosquito bite brings fever very well to small children and adult we do see but its much on children and again pregnant women…' (KII with Religious Leader, Kebbi state)

Table 8: Frequency of common words/concepts provided by study participants in Kebbi state on causes of fever, and malaria fever				
	Causes of fever	**%**	**Causes of malaria fever**	**%**
1	Mosquito bite	37	Stagnant water/gutters	25
2.	Poor hygiene	25	Mosquito bites	24
3.	Dirty environment	9	Poor hygiene	18
4.	Hotness/exposure to sun	7	Dirty environment	10
5.	Stagnant water/gutter	8	None use of mosquito net	9
6.	None use of mosquito nets	6	Bushes/plants around house	7
7.	Not visiting health facility	4	Heat/hot temperature	3
8.	God knows/brings it	4	Different insect bites	3
	TOTAL (n = 143)	**100**	**TOTAL (n = 134)**	**100**

Note n = number of occurrence of words/concepts

6.2.2 Knowledge about malaria test in Kebbi state

Most study participants at the community level know about malaria test. Response in the affirmative occurred 106 times during the FGDs, and KIIs. Impressions on the test were positive as well, with key words/concepts such as good/very good used at least 57 times during the course of the study in the state. Pregnant women using ANC indicated that malaria test was good 7 times, those not using ANC mentioned it was good 11 times, women of reproductive age corroborated that it was good 19 times, men in the community mentioned that the test was good/very good 7 times, and community leaders/religious leader said the test was good 13 times.

Excerpts below from FGD with women of reprodcutive age in Kebbi state buttresses the importance study participants place on medical test.

'...sincerely, I have done it, because even now that I come to this hospital, they had to do it for me and gave me medication; sincerely if they test me and give me drugs I feel better. Because even the time I came here and told them my problem and they gave me drugs, I sincere got better.....Yes, I enjoyed it, and they gave me drugs, sincerely; sincerely, I have never done that test (said one of the participants); I have also had the test, sincerely, and it is good. When am pregnant, I get fever a lot and frequently, and if they prescribe drugs for (me) and I take them, I feel better' (FGD with WRA, Kebbi)

6.2.3 Knowledge about signs & symptoms of malaria fever in Kebbi state

Figure 15: Percenatge distribution of Kebbi State study participants by responses on signs and symptoms about malaria fever

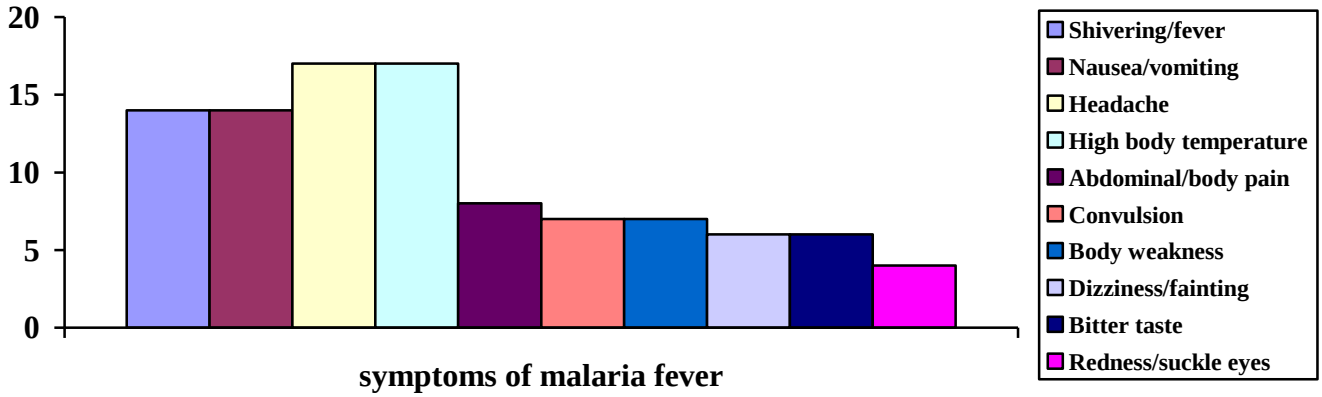


Figure 15 above illustrates cummulative frequency distribution of signs and symptoms of malaria fever using 10 most common words/concepts used at least 148 times during the various FGDs and KIIs conducted among comminties study participants. Most common key words/concepts sugguesting signs and symptons of malaria fever were, shivering/fever (14%), nausea/vomiting (14%), headache (17%), high body temprrature (17%), and abdominal/body pain (8%). Others were convulsion (7%), body weakness (7%), dizziness/fainting (6%), bitter taste (6%), and redness/suckle eyes (4%). The quote below from FGD with men supports findings on typical signs and symptoms of malaria fever in the state.

'…….Malaria is what affect people most, adults. At such time, mostly, whenever you hear someone say they are sick, or having leg pains, headache, he feels like vomiting, it is all nothing but symptoms of malaria. It is malaria that brings these problems. You feel your body heating up, and weakness of the body…..' (FGD with men, Kebbi state)

6.2.4 Dangers of malaria & prevention in pregnancy

Figure 16 below shows the frequency distribution of 10 key words/concepts used 182 times by study participants in Kebbi state suggesting dangers of malaria in pregnant women. The key words/concepts indicative of the most common danger of malaria in pregnancy provided by study participants were; death/still birth (20%), anemia (19%), miscarriage/pregnancy loss (16%), no visit to health facility (8%), low birth weight (8%), and fall into problems i.e. sickly (6%). Other key dangers of malaria fever among pregnant women were lack of nutrients (6%), mother/baby affected (6%), low awareness/sensitization (7%), and vomiting/dizziness (4%).

Figure 16: Percenatge distribution of Kebbi State study participants according to key words/concepts on dangers of malaria in pregnant woman

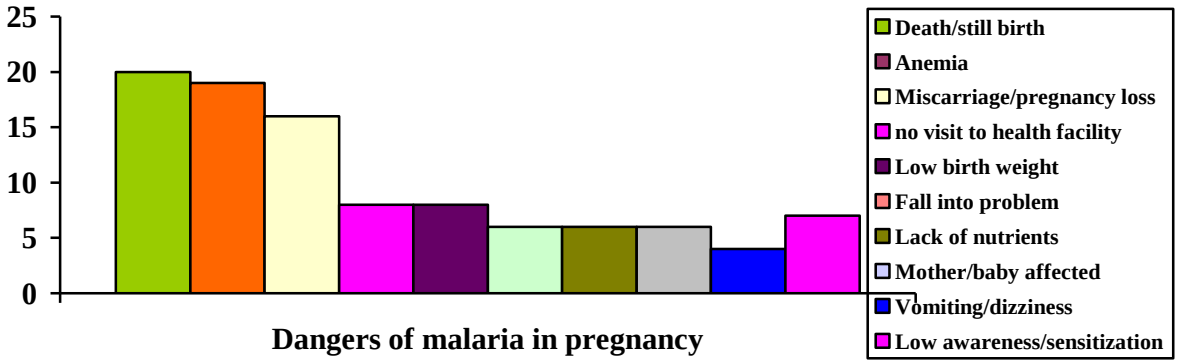
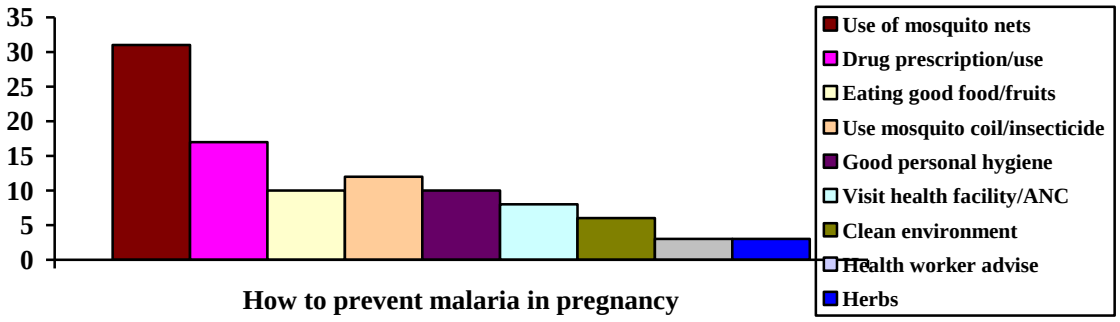


Figure 17 below, illustrates the most common words/concepts depicting malaria prevention measures in Kebbi state. Nine key words/concepts were used at least 182 times to explain ways to prevent malaria among pregnant women in the state. Among the key words/concepts used to suggest prevention measures were, use of mosquito net (31%), drug prescription/use (17%), eating good food/fruits (10%), use mosquito coil/insecticide (12%), and good personal hygiene (10%). Other insightful key words/concepts used to explain malaria prevention measures were, visiting health facility/ANC (8%), clean environment (6%), advice from health worker (3%), and use of local herbs (3%).

Figure 17: Percenatge distribution of Kebbi study participants according to responses on how to prevent malaria in pregnancy



6.3 Utilization of Health Services in Kebbi State

6.3.1 Where pregnant women can receive care vs. where they deliver in Kebbi state

The questions on where pregnant women can receive care or give birth were limited to only community based stakeholders i.e. pregnant women, women of reproductive age, men, and community/religious leaders. On where pregnant women can receive care, study participants mentioned hospital/health facility 42 times during discussions, health worker house-to-house 9 times, traditional midwives/birth attendance 5 times, and chemist 2 times. Whereas on were pregnant women deliver their babies, the same sub-groups mentioned home at least 37 times and hospitals/health facility only 21 times. This sharp disparity in responses suggests the contrast between ideal and reality on how health services are access at the community level.

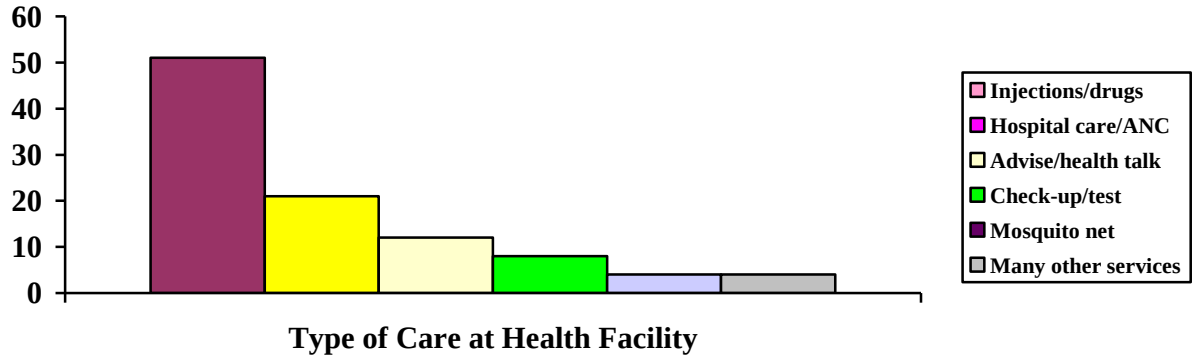
The statements below are extracts from an FGD with pregnant women not using ANC on where they obtain health services and give birth to their babies.

'We depend on God; Most people don't seek for help, but until now that they brought it; We go to the TBA; Sometimes you give birth yourself if TBA is not around; We will hold her, we always out her; You can get some other kind of help; They can give you concoction or ruwa rubutu (Water from Qur'anic writing) give it to you to drink when, you drink it, you will feel better; Pregnant women give birth at home; It only TBA that comes (to our home)' (FGD with women not using ANC, Kebbi state)

6.3.2 Type of care at health facility in Kebbi state

Figure 18 below shows the frequency of words/concepts depicting type of care available at health facilities in the communities where this study was implemented. Six keys words/concepts mentioned 49 times suggesting types of care are injections/drugs (51%), hospital care/ANC (21%), advise/health talk (12%), check-up/test (8%), provision of mosquito net (4%), and many other services (4%).

Figure 18: Percenatge frequency distribution of Kebbi state study participants according to responses on type of care at health facility

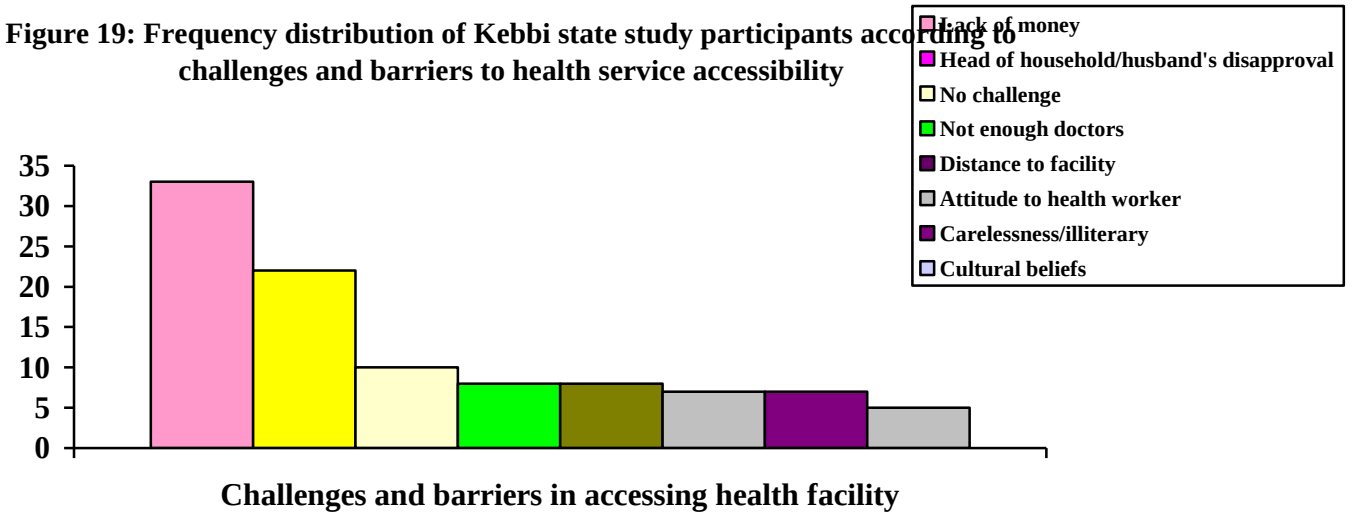


6.3.3 Challenges and barriers to health facility accessibility in Kebbi state

Study participant expressed their challenges and barriers to health services repeating 8 key words/concepts in 76 times during the interviews/discussion sessions conducted. Figure 19 shows frequency distribution of the key words/concepts as lack of money (33%), head of

household/husband's disapproval (22%), no challenge (10%), not enough doctors (8%), and distance to health facility (8%). Other key words/concepts suggesting challenges and barriers are, attitude of health worker (7%), carelessness/illiteracy (7%), and cultural beliefs (5%). It is quite interesting that these findings are similar to those expressed by study participants in Zamfara state as pregnant women's challenges and barriers to health care especially lack of money and head of household/husband's disapproval.

Figure 19: Frequency distribution of Kebbi state study participants according to challenges and barriers to health service accessibility



6.3.4 Reasons pregnant women do not Attend ANC in Kebbi state

Figure 20: Showing Reasons Pregnant Women in Kebbi State Do Not Attend ANC

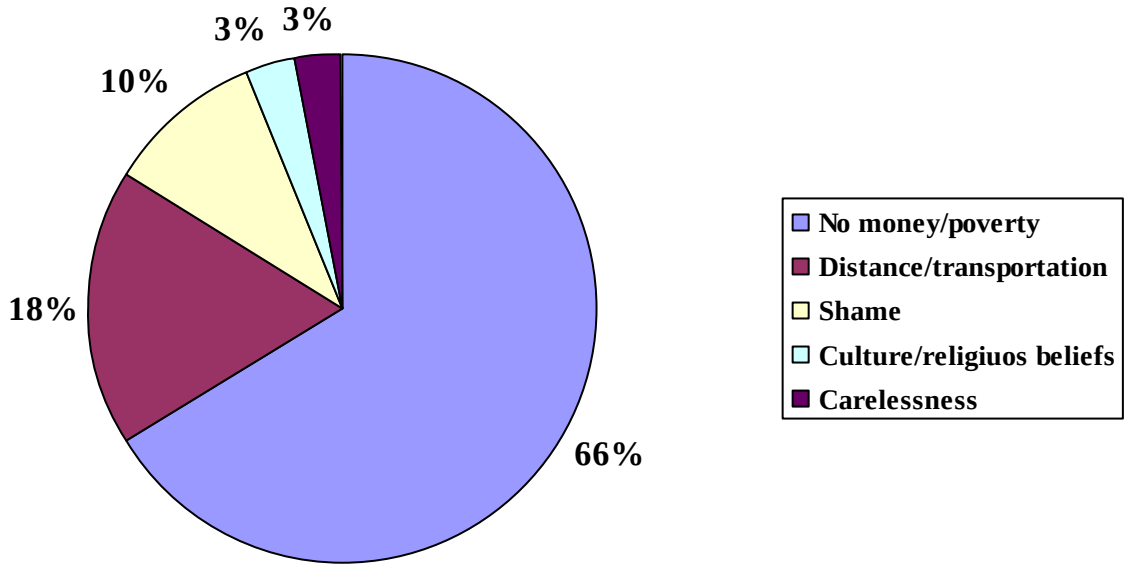


Figure 20 shows the frequency of words/concepts indicating the reasons preganant women were not attending ANC in Kebbi state. The main reasons pregnant women did not attend ANC based on five key words/concepts which occurred 68 times during the discussion of the issue were; no money/poverty (66%), difficulty with distance/transportation (13%), shame (10%), cultural beliefs (3%), and carelessness (3%).

'The hindrances can be that, your husband doesn't have money to give you to transport yourself (or money for drugs) and when we come they request you to pay for medicines and injections that is why we don't come for ANC. Even now there are some husbands if you go for ANC comeback and take the prescription card to him, he will say he doesn't have money to buy medicine you have no choice but drop the prescription card except you were given medicines in the hospital that you will take. If you come for ANC and you are given prescription your husband won't even buy the drugs. And sincerely shame prevents us from coming. When you are heavily pregnant, you will be shame (they all laughed) shamefully.' (FGD with pregnant women not using ANC, Kebbi state)

6.3.5 Services received by pregnant women in Kebbi state

Table 9 shows combined frequency of key words/concepts for all sub-groups who participated in this study in Kebbi state with respect to three key issues. The most frequently used words/concepts indicating types of services received when they attended ANC were; drugs/injections (58%), health talk/ANC (10%), care from health worker (6%), and those who never attended ANC were (26%).

Table 9: Most frequent words/concepts used by study participants in Kebbi state according to services received, ways to increase ANC, and opinion about community outreach to increase pregnant women's ANC attendance

	Health services received by pregnant women who attended ANC	**%**	**Ways to increase pregnant women's ANC attendance**	**%**	**Opinion on community outreach**	**%**
1	Drugs/injection	58	More health workers	22	Support community outreach	92
2.	Never attended ANC	26	Provide gifts (e.g. mosquito nets)	21	Women guaranteed attendance	8
3.	Health talk/ANC	10	Advice husbands	11		
4.	Health worker care	6	Health worker reduce offensive talk/care	6		
5.						
	TOTAL (n = 31)	**100**	**TOTAL (n = 53)**	**100**	**TOTAL (n = 25)**	**100**

Note n = number of occurrence of words/concepts

6.3.6 Ways to increase pregnant women's ANC attendance in Kebbi state

Ways to increase pregnant women's ANC attendance was discussed mainly with pregnant women, and women of reproductive age who mentioned 6 key words/concepts 53 times duirng the discussion. Results in Table 9 show that most common words/concepts used to explain ways

of increasing pregnant women's ANC attendance were; increase number of health workers (22%), provide gifts in the form of mosquito nets (21%) to pregnant women when they visit the facilities, advise husband to give their wives permission (11%), and reduce health workers' offensive attitudes (6%).

6.3.7 Opinions on community outreach in Kebbi state

Table 9 showed that the majority of study participnats welcomed the idea of community outreach strategies for increasing access to health services at the community level, particularly ANC services in the state. Support for community outreach was echoed at least 23 times (92%), and women's commitment to attend 2 times (8%) during the discussion of the issue.

6.4 Kebbi State: Information Sources & Influences on Decision Making

6.4.1 Sources of health information in selected communities in Kebbi state

Data analysis showed that nine key words/concepts occurred 74 times in the discussion on sources of health information in the study communities. From the results in Table 10 below, specific words/concepts indicative of sources of health information are town announcer (27%), radio (23%), religious/community leader (16%), television (8%), and community health worker (8%). Others include hospital/mid-wives (5%), women house-to-house visit (4%), husband (3%), outreaches at home (3%), and newspaper/poster (3%).

6.4.2 Preferred sources of information on malaria in Kebbi state
The results in Table 10 shows that preferred sources of health information indicated by the most frequently used words/concepts were hospital/health workers (29%), pregnant women/children themselves (27%), town announcer (20%), radio (16%), television and posters both 4% respectively. Excerpts below from FGD with men strengthen these findings.

'..there are several ways to get information'; Firstly, we get information on radio. Secondly, they pass information through town announcer (using mega phone); Health authorities also pass information through health workers, and they send messengers into the community to inform people. After passing the information on radio they also send messengers to various areas.' (FGD with men, Kebbi state).

Table 10: Most frequent words and concepts used by study participants in Kebbi state according to sources of health information, preferred sources of information on malaria, and decision maker on ANC attendance

	Sources of health information	**%**	**Preferred sources of information**	**%**	**Decision maker on ANC attendance**	**%**
1	Town announcer	27	Hospital/health worker	29	Head of household/husband	64
2.	Radio	23	Town announcer	20	Father/mother in-law	14
3.	Religious/community leader	16	Pregnant women/children	27	Religious/community leader	10

4.	Television	8	Radio	16	Health workers	6
5.	Community health worker	8	Posters	4	Woman herself	3
6.	Hospital/mid-wives	5	Ceremonies	4	Relatives/friends	3
7.	Womne house to house	4				
8.	Outreaches at home	3				
9.	Newspaper/poster	3				
	TOTAL (n = 74)	**100**	**TOTAL (n = 45)**	**100**	**TOTAL (n = 70)**	**100**

Note n = number of occurrence of words/concepts

6.4.3 Decision making on pregnant women ANC attendance

Clearly, the role of head of household/husband in the decision for pregnant women to attend ANC is paramount. Of the 6 words/concepts mentioned 70 times by study participants, head of household/husband occurred 64% of the time, followed by father/mother in-law (14%), religious/community leader (10%), health worker (6%), woman herself (3%), and relatives/friends (3%). The role of men is expressly stated in the following culled from FGD with pregnant women not suing ANC in Kebbi state.

'lack of going for ANC is not from the women is from the men,when you talk to them they will say but you are fine why should you go for ANC; Men should be advice to allow their women to go for ANC,when you want to go and he tells you not to go you have to remain at home; Except if your husband allow you even if you want to go,I tell you our problem is from this men, a woman don't have problem when they tell her go she goes the previous pregnancy I was sick, I spend 4days without steping out of my room,they told him to take me to the hospital he said no; They (the men) will say that is in the hand of God.' (FGD with pregnant womne not using ANC, Kebbi state)

6.4.4 Strategies on ANC uptake and malaria prevention in Kebbi state

On strategies to increase uptake of ANC in the selected communities in Kebbi state, the most mentioned strategy were awareness/mobilization (7 times), more health personnel/training (5 times), volunteerism (2 times), and reduced geographical distance (2 times). These may be factored into programming geared to increase malaria prevention, and ANC uptake in the state.

7. Conclusions and Recommendations

The overall objective of this study was to conduct a baseline qualitative assessment on the knowledge, perceptions, practices, and barriers to malaria prevention and ANC uptake among pregnant women in Zamfara and Kebbi states located in the North West region where uptake of malaria prevention services among pregnant women; and ANC is the lowest in the country.

Phenomenological methods, principles and procedures are embedded in the study data collection, analysis, and interpretation of results. Twenty-four FGDs, 12 per state, and 28 KIIs 14 per state were conducted in the two states for a period of about two weeks. Analysis relied on frequency and convergence of words/concepts to establish value and importance of responses obtained to the questions tackled in the study.

Key conclusions and recommendations are presented separately for each of the two focus states.

7.1 Conclusions and recommendations for Zamfara state

Emerging Theme I: Knowledge of the causes of malaria fever is high, and diagnostic test is well known but this has not translated fully to adequate preventive measures.

- The most common indicative words/concepts for causes of malaria fever used by study participant in the state were; mosquito bite/lack of net, dirty environment, and standing water/gutter. These are causes or related causes of malaria fever that can be prevented in a cost-effective fashion by effective communication strategies directed to changing attitudes of people, and should be the focus of programs geared to considerably reduce malaria infection in the state.

- Malaria test is well-known among study participants, who attested that it was good and important procedure. However, findings showed that test may have been conducted less often than should be based on smaller number of words/concepts on knowledge about test vs. good quality test that evidence suggest. Programming efforts should be directed to enlightening the target sub-groups on the importance of conducting test for malaria fever before treatment.

- Key signs and symptoms of malaria reported among pregnant women by study participants were nausea/vomiting/diarrhea, extreme cold/fever, headache, hot body temperature, body/abdominal pains, body weakness/dizziness among others. Intervention programs should be directed to correcting wrong information about signs and symptoms of malaria and focus efforts on prioritizing them for effective diagnosis and treatment.

Emerging Theme II: Risk perceptions about the dangers of malaria and prevention not very high among pregnant women, and knowledge and information base for this may be quite weak.

- Dangers of malaria among pregnant women based on most common key words/concepts were anemia, abortion/miscarriage, death, child/fetus disability, bleeding, and low birth

weight, and these vary across the sub-groups of study participants. Although the major dangers of malaria fever were mentioned in the discussion with the study participants, the ordering of these dangers based on the strengths of convergence of words/concepts have implications on risk perceptions about the disease. Perhaps, a more appropriate ordering based on severity of the danger would be death, abortion/miscarriage, child/fetus disability, anemia etc. Program interventions should enable the target population especially pregnant women with information on the dangers of malaria and prioritize them by severity in order to increase risk perceptions and thus, self-efficacy in taking preventive actions to reduce infection.

- The most common words/concepts indicative of knowledge about malaria prevention were; mosquito net use, environmental sanitation, drugs/tablets use, ANC attendance, use of mosquito repellant/coil, and personal hygiene, and variations exist across sub-groups with respect to which comes first, and especially between preventive vs. treatment. Program intervention should address gaps in knowledge about prevention among study participants.

Emerging Theme III: There are obvious disparity between where pregnant women can get care and where they deliver their babies.

- Evidence from this study suggest that pregnant women know they can get care from hospital/health facility and the range of services they can obtain based on most common words/concepts that they used during field discussions were; drugs/injections, body examination/test, health talk, ANC, other medical treatment, and mosquito nets among others. However, findings suggest that the majority of pregnant women deliver their babies at home.

- Reasons for the counterintuitive behavior observed among pregnant women in this study may include barriers to health care use indicative of the most common key wards/concepts used by the pregnant women such as; poverty/no money, attitude of health worker, distance/mobility, lack of husband's support, and no mosquito nets as incentive. Each of these barriers should be tacked separately by program intervention geared to increase use of hospitals/health facility among pregnant women in the studied communities. For effective programming to reduce these barriers, pregnant women may be segmented into three groups i.e. (1) those motivated and are using health facilities, (2) those motivated and are not using health facilities, and (3) those not motivated and are not using health facilities..

Emerging Theme IV: There are gaps in synergy between available sources and preferred sources of health information.

- Sources of health information in the studied communities based on most common words/concepts were; radio, town announcer, health worker, and community/religious leader according to order of importance. Whereas, preferred sources of health information in order of importance based on the convergence of words/concepts used by

study participants were; health worker, town announcer, community outreach, radio, community/religious leader, and phone. These gaps in synergy need to be tackled by intervention programs aimed at increasing reach and the impact of health information in the studied communities.

Emerging Theme V: Women make the initial decision on ANC but need husband tacit approval to ensure regular visit to health facility.

- Evidence from study participants at the community level suggest that women most often want to use ANC and thus, make the initial decision to use the service. But their initial decision need to be backed up by their husband's support and approval to ensure regular use of ANC through the three trimesters of pregnancy, and to bringing it to term at the health facility as well. These results suggest a two-faced approach to programming with simultaneous activities targeting both wives and husbands with information to encourage and motive use of ANC during pregnancy.

7.2 Conclusions and recommendations for Kebbi state

Emerging Theme VI: Knowledge about causes of malaria quite high likewise use of diagnostic test, but along side are traces of incorrect knowledge.

- Causes of malaria fever based on convergence of indicative words/concepts were; stagnant water/gutters, mosquito bites, poor hygiene, and dirty environment, which are correctly, identified as breeding platforms for malaria infection in the studied communities. Also evident based on most common words/concepts used by study participants are misinformation such as different insect bites, and animal at home that are far removed from the cause of malaria fever. Buttressing these significant traces of misinformation are results on the causes of fever, an antecedent to malaria fever. Aspects of this study results suggest 'God knows/brings it,' and 'drinking open water' as causes of fever. Program intervention in the state need more focused on clarifying misinformation about the cause of malaria while strengthening correct knowledge to increase prevention efforts in the state.

- Key words/concepts suggesting signs and symptoms of malaria fever among the study population in order of importance based on frequency of occurrence were; shivering/fever, nausea/vomiting, headache, high body temperature, and abdominal/body pain etc. Programming geared to increase malaria prevention coverage in the state may need to prioritize information on these signs and symptoms to increase risks perceptions on malaria infection in the state.

Emerging Theme VII: Risk perception about malaria infection is quite high in the state, but this need to translate to less incidence of the disease with more effective prevention strategies.

- The dangers of malaria fever based on the similarities of words/concepts expressed by study participants were; death/still birth, loss of blood/anemia, miscarriage/pregnancy

loss, lack of visit to health facility (not obvious danger), low birth weight, and lack of nutrients (not obvious danger). The ordering of the dangers of malaria fever among pregnant women is an indicator of high-risk perception about malaria infection in the studied population. The current risk perceptions based on the indicative danger signals of malaria fever should be strengthened while not obvious dangers like lack of nutrients, and visits to health facility need more clarifications in order to increase self-efficacy and necessary behavioral changes for uptake of preventive measures in the state.

Emerging Theme VIII: There are obvious differences between where pregnant women can receive health care, and were they deliver their babies.

- Results of this study based on convergence of words/concepts shows that pregnant women know they can receive care from hospitals/health facilities in their respective communities, and from health workers house-to-house visit. The range of services provided at the facilities include injections/drugs, hospital care/ANC, health talk/advice, and check-up/test among others.

- However, in reality where they give birth is different among the majority based on the ordering of most common words/concepts that suggest home before hospital/health facility. This disparity in behavior is similar to those reported in Zamfara state study participants. Likely reasons for the disparity may be the barriers and challenges to using health facility expressed such as lack of money, household/husband's disapproval, lack of doctors at the health facilities, distance/transportation to facility, attitudes of health workers, and carelessness/illiteracy, shame, and cultural beliefs. Program intervention need to tackle specifically the stated challenges and constraints in order to increase more use of health facility by pregnant women.

- Specific ways to increase pregnant women's ANC attendance include; increasing number of health workers, providing gifts such as mosquito nets as incentives, advice to husbands to specifically give financial and other support to their wives on ANC, health worker's attitudinal change, more free drugs, rehabilitation and improved amenities at hospitals/health facilities, and increased outreach and enlightenment campaign strategies.

Emerging Theme IX: There are obvious gaps between sources of health information and preferred sources of information on malaria.

- Evidence based on most frequent words/concepts suggest that sources of health information reported by study participants were; town announcer, radio, religious/community leader, television, and community health worker. While preferred sources of malaria information based on the most frequently mentioned words/concepts by study participants were; hospital/health workers, pregnant women themselves, town announcer, and radio. These gaps in information exchange platforms need be addressed by intervention program with the aim of reducing incidence of malaria in the studied communities.

Emerging Theme X: Head of household/husband is the main player in deciding pregnant women's ANC utilization with some influences from in-laws.

- Findings of this study suggest that head of household/husband is the sole decision maker in pregnant women's ANC use. These were indicative of the overwhelming convergence of words/concepts on head of household/husband, and to some extent, father/mother in-laws, and religious/community leader during discussion among study participants. Unlike Zamfara state, the initial roles played by women in obtaining ANC were not observable, or perhaps, salient in Kebbi state. Thus, program intervention in Kebbi state will need to incorporate strong male involvement strategies to ensure that they have a buy-in in the process of increasing ANC intake among pregnant women in the state.

8. Appendixes

Appendix I: Frequency of common words/concepts used by study participants on causes of fever and malaria fever in Zamfara state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/ Religouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Causes of Fever						
Mosquito bite =5 Poor environ/hygiene =1 None use of LLIN nets =1 Standing water =1 Improper use of net=1	Mosquito bite=4 Not using cloth overnight=2 Dirty utensils =1 Stagnant water =1 dirty environment =1 Staying longer outside=1 Lots of worries=1	Mosquito bite =5 Improper use of net=3 Stagnant water =1 Poor mobilization = 1 Measles =1	Mosquito bite =3 Improper use of net =1 Poor mobilization=1 Personal hygiene =1 Lack of cleanliness=1	Mosquito bite =9 Lack of hygiene = 4 Gutters = 4 Dirty environment = 2 Improper use of mosquito net =2 Lack of care =1	Mosquito bite =5 Stagnant water =5 Dirty environment =5 Lack of cleanliness=2 Not using net =2	Mosquito bite = 31 Dirty environment/lack of personal hygiene = 18 Standing water/gutter = 12
Causes of Malaria Fever						
Dirty environ =5 Mosquito bite/not using LLIN=4 Gutter/dirty water =4 refuse disposal =2 Keeping late Night outside=1	Stagnant water =7 Mosquito bite/lack of mosquito net =4 Dirty environment =3 Lack good drainage =2 Lack of mosquito coil use =2	Dirty environment =5 Lack of mosquito net=4 Stagnant water = 2 Poor hygiene =1 Mosquito bite =1 Poor feeding =1 Lack of preventive drugs =1 Uncovered well =1	Dirty environment =7 Mosquito bite =3 Stagnant water =1 Lack of taking drugs =1 Lack of mosquito net =1	Gutters/stagnant water =6 Mosquito bite = 4 Abundant Lack of mosquito nets=4 Lack of hygiene =4 Dirty environment = 2 Presence of cemetery =1	Mosquito bite =14 Dirty environment= 3 None use of mosquito net =1	Mosquito bite/lack of net =39 Dirty environment = 25 Standing water/gutter = 23

Appendix II: Frequency of words/concepts used by study participants on malaria signs and symptoms in Zamfara state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/ Religouus leader**	**Health workers/other stakeholders**	**Total Combined**
Signs & Symptoms of Malaria						
Nausea/Vomiting =5 Hot body temp=3 Persistent fever=2 Urine change =2 Headache =2 Cold =2 Pains = 2 Body weakness=1 Diarrhea =1 Low body weight =1	Headache =6 Vomiting/diarrhea =5 Body pain =4 Extreme fever =4 Hot body temp =3 Anemia = 2 Eye redness =1 Body weakness =1 Standing water =1 Cold =1	Headache =3 Body/Abdominal pain=3 Loss of appetite=3 Mouth bitterness/vomiting =2 Diarrhea =2 Fever =1 Hot body temp=1 Cold =1 Redness of eyes=1	Vomiting/diarrhea =3 Convulsion=2 Weakness =2 Hot body temp=2 Sleepiness =2 Pains(abdomen) =2 Loss of appetite=1 Headache =1 Fever =1	Hot body temp =5 Body weakness=5 Vomiting =5 Anemia =2 Headache =2 Loss of appetite =1 Abdominal pain =1	Vomiting/diarrhea =9 Body weakness/dizziness=5 Headache =4 Hot Fever =4 Pains (abdominal) =3 Hotness =2 Cold =2 Loss of appetite =2	Nausea/vomiting/diarrhea =29 Headache = 18 Extreme/persistent fever = 18 Hot body temp = 15 Body/abdominal pain = 15 Body weakness/dizziness = 14 Loss of appetite = 7

Appendix III: Frequency of words/concepts used on dangers and prevention of malaria in Zamfara state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/ Religouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Dangers of malaria in pregnant women						
Abortion/Miscarriage = 5 Anemia = 2 Convulsion =2 Death =2 Bleeding =2 Swollen body/legs =1 Free mutual babies =1 low birth weight =1	Death =5 Bleeding =3 Anemia =2 Low birth weight =1 Abortion = 2 Prolonged labor =1 Affect child growth=1	Death in children and adult =1 Anemia =3 Convulsion =2 Vomiting =3 Diarrhea =2 Abortion =2 Prolonged labor 1	Anemia =6 Abortion/miscarriage =4 Death =3 typhoid =1 Affects pregnancy=1 Low weight =1 Bleeding =1 Prolonged labor =1 Brain inflammation= 1	Affect/disability fetus =9 Miscarriage =6 Anemia =5 Loss of weight =2 Death =2 Consistent fever = 1	Death =3 Malaria typhoid =1 Anemia =8 Abortion/miscarriage =6 Eclampsia = 2 Premature labor=2 Law birth weight =2 Oedema =1 Bleeding =1 High blood pressure =2	Anemia = 26 Abortion/miscariage =25 Death = 16 Child/fetus diability = 11 Bleeding = 7 Low birth weight =7 Vomiting/diarrhea = 5 Convulsion = 4
Malaria prevention in pregnant women						
Use mosquito net =5 Environmental sanitation=4 Drugs/tablets =3	Use mosquito net =7 Removing stagnant water =1 Visit hospital =1 Clearing dirty environment =1	Use mosquito net =3 Environmental hygiene =3 Drugs (IPT) =3 Cutting grass = 2 Personal hygiene =1 Proper waste disposal =1 Attendance of ANC =1	Use mosquito nets =7 Taking anti-malaria drugs=2 Use coils =1 Use insecticide =1 Cutting grass =1 Clean environment =2 health facility/ANC attendance =2	Use of mosquito nets = 9 Mosquito coil/Repellant = 6 ANC visits/Health talk =3 Insecticide spray = 2 Drugs = 2	Mosquito net/LLIN =12 Drugs =3 Environmental sanitation =3 Personal hygiene =2 Removing standing water =2 poster on Malaria =1 Education at health facility =1	Mosquito net use = 43 Environmental sanitation (e.g. cut grass/remove stagnant water) =20 Use drugs/tablets =13 Use coil/insectisant = 10 Attend ANC = 7 Personal hygiene =3

Appendix IV: Frequency of words/concepts used on where preganant can receive care and type of care, where women deliver babies, and barriers to regular visit to health facility in Zamfara state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/Religouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Where pregant women can receive care and type of care						
Hospital =3 At home =2 Nearest health facility =2 Medicine stores=1 Drugs=2 Injections=1	Hospital =2 At home =2 Drugs =2 Medical treatment=1	Hospital/health facility =5 Drugs =8 Health talk=4 ANC =3 Urine test =1	Hospital =3 Check general/special body functions=4 Medical treatment =1 Drugs =2 Health talk =3 HIV screening =1	Hospital =15 Pregnancy exam & test =5 Pregnancy status =1 Health talk =3 Medicine/drugs =3 Injections/drugs = 4 Food to eat =1 Next check-up =1	Drugs = 4 Mosquito net = 2 ANC = 4 Health education =3 Child health =1 Satisfied =1	Hospital/health facility = 27 At home = 4 Medicine stores =1 Drugs/injections = 21 Health talk =13 Exam/test =13 ANC =3 Medical treatment = 2 Msoquito net =2 Child health =1
Where preganat women deliver their babies						
Hospital =3 At home=4 Nearest health facility =2	At home=5 Complications hospital =1	Hospital =1 In houses =2 Culture = 1 Distance =1	Home/many=2 Hospital/some =2	Not applicable (n/a)	Not applicable (n/a)	At home=15 Hospital =10 Nearest health facility =2
Challenges and barriers to regular visit to health facility						
Lack of money/poverty =3 Husband lack of support=2 Health worker's attitude =2 Distance=1 Due to HIV screening=1	Lack of money=7 Attitude of health personnel =4 Poor health facility =2 Ignorance = 1 Distance =1 No ANC provider =1	Lack of money=2 Attitude of health workers =2 Culture =2 Afraid of other diseases=1 Lack of mobility =1 No husband support =1 Waiting time =1 HIV screening =1 Ignorance =1	Distance =2 Lack of drugs=2 No ANC at base =2 Lack Husband support =1 poverty=1 Distance=1 Lack of money=1 Attitude of health staff =1	Religion = 5 Attitude of health worker = 3 Financial issues = 2 Attitude of husband =2 Poor economic condition =1 Distance = 1 Ignorance = 1	Not applicable (n/a)	Poverty/no money =16 Husband Lack of support =6 Health worker's attitude =12 Distance/mobility = 7 Poor health facility =2 HIV screening/other diseases =3 No ANC provider =3 Ignorance = 3 Culture/religion =7 Lack drugs =2 Waiting time =1

Note: n/a = question not applicable to the sub-group

Appendix V: Most frequent words/concepts used to provide reasons pregnant women do not attend ANC, type of services received for those who attend, what can be done to increase uptake, and thoughts about community outreach in Zamfara state				
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Workers workers/other stakeholders**	**Total Combined**
Reasons pregnant women not attend ANC				
Poverty=1 Distance =1 Due to HIV screening=1 Poor attitude of health worker=1	Lack of husband support =2 Attitude of staff =2 No ANC provider =1 Economic problem =1 Ignorance =1 Distance =1	Lack of money =2 Humility by health staff =1 Afraid of another disease =1 Lack of mobility=1 Husband not in support = 1	Service charges /Poverty=4 Harassment from health workers=3 Distance =2 No mosquito nets =2 Interpersonal communication=1 Lack of awareness=1 Health worker behavioral change=1	Poverty/no money=8 Attitude of health worker=7 Distance/mobility =5 Lack of husband's support =3 No mosquito net =2 Due to HIV screening=1 No ANC provider =1 Ignorance = 1 Interpersonal communication =1 Lack of awareness =1 Other diseases =1
Services received by pregnant women who attend ANC				
Drugs=11 Mosquito nets=8 Injections=3 Cared for =1	No attendance =8 Free drug=2 Good character of staff =1	Given drugs = 5 Mosquito nets =4 Human relations/IPC skills=1	Not applicable (n/a)	Given Drugs=18 Mosquito nets=12 No attendance =8 Injections=3 Good care/character of staff =2
Ways to increase pregnant women's ANC attendance				
Mosquito nets=2 Good care=3	Bring ANC provide=8	Money =5 Create awareness/Information= 4 Give us mosquito nets=1 Drug = 1 Gave us soap = 1	Not applicable (n/a)	Need ANC provider =8 Create awareness/information = 4 Money =5 Mosquito nets=3 Good care=3 Give drugs = 1 Give soap =1
Opinion on community outreach				
Like to visit facility=1 Like service to come=2	Outreach supported =17	Encourage outreaches with women =6 Encourage pregnant women=2	Give incentive (mosquito net) =4 Train health workers(female) =4 Creating awareness=3 rulers/religious rulers=3 Involve the community=1 Health workers to bring health talk=2 Give wrapper=1 Give token to start micro business.=1 Focus ANC be improve=1 Involving traditional Health service free =1	Outreach supported = 23 Give incentive (mosquito) =5 Train female health workers (4) Awareness creation/health talk =5 Rulers/religious leaders =4 Like to visit facility=1 Encourage pregnant women =2 Give token to start micro business =1 Focus ANC to improve =1 Involve trad. health service

Appendix VI: Most frequency of words/concepts used to discribe sources of health information, and influences on decision making on pregnant women use of ANC in Zamfara state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/Religouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Sources of health information in the community						
Radio=11 Television =8 Town announcer =8 Health worker =8 Through polio vaccinators=1	Town announcer =4 Radio =2 Community leader =1	Radio =1 Village head =1 Town announcer =1 Pamphlets =1	Town announcers =9 Radio =9 Mobile phone =1 Leaflets =1	Community leader/imam = =9 Health worker =5 Radio = 4 House-to=house= 3 Town announcer =2 Publicity =2 Ceremony =2 Television = 1	Prefer OLPC to hospital =2	Radio=27 Town announcer =26 Health worker =13 Community leader/imam =11 Television =9 Pamphlets/leaflet =2 Ceremony =2 Publicity = 2 Through polio vaccinators=1 Mobile phone=1
Preferred sources of information on malaria						
Radio =1 Health worker=1 Town announcer=1	Town announcer =2 Community volunteer =1 Malaria prevention =1	Malaria vaccine 8 Town announcer =2 Community leaders =1 Health worker =1	Town announcer =2 Radio =2 Mobile phone = 2 Leaflets =2	Community leader =4 Town announcer =3 Health worker = 3 House to house = 3 Radio = 2	Frequent outreaches =8 Control mobility =1	Radio =5 Health worker=14 Town announcer=10 Outreaches =8 Community leader =5 Mobile phone =2 Leaflets =2 Community volunteer =1 Control mobility =1
Decision maker on ANC for pregnant women						
All =8 Husband=1	Woman =8 Ready to attend ANC=2 Husband =1	Husbands = 1 Women =8	Husband=1	Head of house/husband = 3 Community leader = 4 Husband & wife =1 In-laws = 2 Friends/neighbours =2 Closest health facilitator =1		Women =26 Husband=7 Community leader = 3 In-laws = 2 Friends/neighbor =2 Husband/wife = 1 Health facilitator =1

Note: n/a = question not applicable to the sub-group

Appendix VII: Frequency of common words/concepts used by study participants on causes of fever and malaria fever in Kebbi state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/Religouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Causes of Fever						
Mosquito bite = 6 Poor hygiene =6 Drinking open water =4 Grasses around the house = 3 Animals =2 Hotness/exposure to sun =2 Non-use of mosquito nets =2 Dehydration =1 Loss of appetite =1	Mosquito bites = 6, Sun = 4 High temperature = 3 God brings it = 3 Malaria = 2 Constipation = 2 Measles = 1	Personal hygiene = 11 Mosquito bite = 8 Dirtiness = 5 Beaten by rain = 1 Flu = 1 Lack of bathing =1	Mosquitoes = 21 Stagnant water/gutter = 6 Poor hygiene = 7 Dirty environment =5 Ignorance = 2 Lack of mosquito nets =2 No health inspector =2 It is from God =2 Body heat = 1	Mosquitos = 7 Personal hygiene = 7 Standing water/gutter = 6 Poverty = 2 Dirty environment = 2 Bad eating habit = 1 Too much cold = 1 Lack of net = 1 Urine = 1 Things eating =1 Only God knows =1	Not visiting health facility = 6 Dirty environment = 6 Respiratory tract infections =5 Mosquito bite 4 Lack of mosquito net= 3 Negligence =2 Malaria/typhoid =2 Otitis =2	Mosquito bite = 52 Poor hygiene =36 Dirty environment =13 Hotness/exposure to sun =10 Stagnant water/gutter = 12 Non-use of mosquito nets =8 Not visiting heath facility =6 God knows/brings it = 6 Respiratory tract infections =5 Drinking open water =4 Malaria/typhoid =4 Ignorance/negligence =4 Grasses around the house = 3 Animals =2 Poverty = 2 Otitis =2 No health inspector =2 Constipation = 2
Causes of Malaria Fever						
Mosquito bites = 7 Bushes/plant around house =7 Poor hygiene =3 Heat =3 Lack of use of LLIN=3 Animals at home = 3 Stagnant water = 2 Dirty plates = 2 Dizziness = 1 Gutters = 1	Poor hygiene 5 Dirty environment = 7 Standing water/gutter = 8 Mosquitos /lack of nets= 6 Lack of bathing = 2 Lack of sleep = 1 Cold = 1	Mosquito bite = 9 Stagnant water/gutter =6 Dirty environment =2 Planting/grasses =3 Sewage =1 Eating uncovered food =1	Standing water/Gutter = 9 Poor hygiene = 9 Mosquito bite =5 Dirty environment = 3 Lack of mosquito nets =1 Hot weather = 1	Mosquitos = 4 Different insect bite =4 Standing water/gutter= 3 Things eating = 1 Known reason = 1 Only God knows =1	Mosquito bite = 7 Stagnant water = 4 Carelessness =2 None visit of health facility =2 None use of mosquito net =2 Dirty environment =2	Stagnant water/gutters = 33 Mosquito bites = 32 Poor hygiene =25 Dirty environment =14 Lack of use of mosquito net=12 Bushes/plant around house =10 Heat =4 Different insect bite =4 Animals at home = 3 None visit of health facility =2 Dizziness = 1

Appendix VIII: Frequency of words/concepts used by study participants on malaria signs and symptoms in Kebbi state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/Religouus leader**	**Health workers/other stakeholders**	**Total Combined**
Signs & Symptoms of Malaria						
Vomiting/diarrhea = 5 Body discomfort/shivering = 5 Convulsion = 4 Bitter mouth = 2 hot body temperature =2 Death = 2 Headache = 1 Loss of appetite =1 Child deformity =1	Dizziness/fainting =8, Headache = 5 High temperature = 4, Stomach pain = 4 Mouth discomfort/vomiting = 3 Purging = 1 Catarrh = 1 Body discomfort = 1 Hand curving = 1 Lack of blood = 1, Convulsing = 1, Death = 1	High body temperature =4 Weakness =4 Bitter mouth/Vomiting =4 Headache =3 Feverish =3 Loss of appetite = 2 Convulsion =2 Suckle eyes =2	Headache = 8 High body temp =8 Mouth bitterness/vomiting = 6 Body weakness = 4 Joint pains = 4 Cold = 2 Convulsion = 1 Dizziness = 1	Headache = 4 High body temperature = 4 Feverish = 3 Lack of blood =3 Cold/cough = 2 Delivery problem =1 Difficult breading =1 Diarrhea =1	Shivering/Fever =5 Nausea/vomiting =6 Headache =4 Bleeding = 4 Loss of fluid =4 Foetal death =3 Convulsion =3 Hotness of body =3 Children redness of eyes = 2 Body weakness =2 Abdominal body pain =4 Bitter taste =2 Keeping silent =1	Shivering/Fever =20 Nausea/vomiting =20 Headache =25 High body temp. =25 Abdominal/ body pain =12 Convulsion =11 Body weakness =11 Dizziness/fainting =9 Bitter taste =9 Redness/suckle eyes = 6 Bleeding = 4 Loss of fluid =4 Fetal death =3 Death =3 Lack of blood =3 Loss of appetite =3

Appendix IX: Frequency of words/concepts used on dangers and prevention of malaria in Kebbi state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Men**	**Community/ Religouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Dangers of malaria in pregnant women						
Loss of blood = 3 Death = 4 Prolonged labour = 1 Convulsion = 2 Weight loss = 1 Mother/child suffer =1 Miscarriage =1 Vomiting = 1 Dizziness = 1	Lack of going to hospital /doctor = 14 Loss of blood/anemia = 8, Fall into problem =8 Death of baby/mother = 7 Early labor/miscarriage = 7, Stomach/abdominal pain = 2 Loss of body fluid = 1, Yellow eyes = 1 Go mad a little = 1, low birth weight = 1,	Loss of body weight = 6 Death = 3 Anemia = 3 Malaria transfer =2 Uncomfortable = 2 Miscarriage = 2 Headache =1 Convulsion = 1 Fever = 1 Sick child = 1	Anemia = 12 Death/still birth = 9 Lack of nutrients =11 Vomiting = 6 Affect baby = 5 Body weakness/upset =4 Problem increase = 3 From eating =3 Malaria transfer to child = 1 Convulsion = 1 High blood pressure =1 Child develop complications =1 Spitting = 1	Death = 5 Madness =3 Dangerous =1 Deafness = 1 Partial paralysis = 1 Miscarriage/loss of baby = 5 Mother baby affected =5 Pains = 2 Frequent sickness = 2 Baby cold/malaria = 1 Low weight baby = 1	Death =8 Low awareness =7 Low sensitization =5 Geographical distance =4 Miscarriage/pregnancy loss =15 Anemia = 8 Bleeding =5 Premature labor =4 Low birth weight =4 Loss/breakage of amniotic fluid =3 Malnutrition =2 Self-medication 2	Death/still birth =36 Loss of blood/Anemia = 34 Miscarriage/pregnancy loss =30 Lack of visit to health facility =14 Low birth weight =14 Fall into problem =12 Lack of nutrients =11 Mother/ baby affected =11 Vomiting/dizziness =8 Low awareness =7 Low sensitization =5 Geographical distance =4 Bleeding =5 Stomach/abdominal pain=5 Premature labor =4 Weakness/upset =4 Loss/breakage of amniotic fluid =3 Convulsion =4 Madness =4 Malaria transfer=4 Frequent sickness =2 Malnutrition =2 unconformable =2 Self-medication 2
Malaria prevention in pregnant women						
Mosquito net use =12 Drug prescription/IpTp =13 Mosquito coil = 4 Good hygiene = 3 Health worker advice=6 Fan = 2 Visit hospital = 1 Clean environment =2 Close window = 1 Let curtains	Use mosquito nets =10, Attend ANC = 3, Use insecticide = 4 Personal hygiene =5 Use mosquito coil =1, keep the environment =1 Rely on God =1	Eat good food/fruits = 17 Use mosquito net =11 Hygiene = 5 Clean environment =5 Stress less = 3 Frequent visit to hospital = 2 Mosquito coil = 1	Herbs = 6 Mosquito net = 5 Drugs = 4 Clean environment =3 Visit hospital/ANC =2 Mosquito coil = 1	Mosquito net = 10 Use drug/medicine =7 Mosquito coil = 4 Good hygiene = 2 Eat good food = 1 Adult/children injected = 1 Community spraying = 1	Use of mosquito net =4 Use of mosquito coil =4 Clear standing water/gutter = 3 Visit health facility =3 Take drugs =3 Good hygiene =2 Cover drinking water =2 Use mosquito net=4 Given drugs = 3 Visit health facility =2 Good hygiene =2 Avoid standing water =1	Use of mosquito net =52 Drug prescription/use =31 Eat good food/fruits =18 Use mosquito coil/insecticide =21 Health worker advice =6 Clear standing water/gutter = 3 Visit health facility/ANC =14 Good personal hygiene =19 Cover drinking water =2 Clean environment = 11 Herbs =6 Use mosquito net=4 Stress less =3 Fan = 2 Avoid standing water =1 Rely on God =1

down =1					Use insect repellant =1	Close window=2

Appendix X: Frequency of words/concepts used on where preganant can receive care and type of care, where women deliver babies, and barriers to regular visit to health facility in Kebbi state

Pregnant women using ANC	Pregnant women not using ANC	Women of reproductive age	Men	Community/ Religouus leader	Workers workers/other stakeholders	Total Combined
Where pregant women can receive care and type of care						
Hospital = 10 Drugs from hospital = 8 Hospital care/ANC = 5 Test = 2 Mosquito net = 1	Hospital = 10 Health workers house to house = 8 TBA = 2 God = 1 Nowhere =1 Drugs/injection = 4 Advice/care = 3 Concoction = 1 Food =1	Hospital = 12 Chemist = 2 District head house = 1 Malaria drugs/drugs =9 Advice =1	Medication/drugs = 2 ANC =1 Mosquito nets =1 Check-up/Malaria test = 2 Many others =2	Hospital = 10 Traditional midwives = 2 ANC = 4 Injection/Medicine =2 Advise =1 Train health talk =1 Cleanliness =1 Ultra sound = 1		Hospital = 42 Health workers house to house =9 Traditional midwives/birth attendance =5 Chemist =2 Hospital care/ANC = 10 Injection/drugs =25 Advise/health talk =6 Check-up/test =4 Mosquito net =2 Many others = 2 Cleanliness =1 God =1 Concoction =1 Ultra sound = 1
Where preganat women deliver their babies						
Home = 6 Hospital = 9	Home = 9 Hospital 1	Home = 11 Hospitals = 4	Home =11 Hospital/health facility = 7 Other places = 1			Home =37 Hospital/health facility = 21 Other places = 1
Challenges and barriers to regular visit to health facility						
Husband disapproval = 6 Not enough doctors =3 No challenge = 2 Woman not interested =1 Give drugs you deserve =1 Carelessness = 1 Inconvenience = 1	Lack of money = 8 No husband support = 3 Distance to facility = 3	No husband support =3 Financial reasons = 6 Male doctor bias =1 Distance to facility =1 Long waiting at facility = 1	No challenge = 6 Attitude of health workers = 4 Economic reasons = 4 Cultural beliefs =4 Lack of money = 4 Docs unavailable = 3 Women willingness to attend =2 Afraid of injections/ultrasound = 2 Distance = 1	Head of household/husband = 5 Lack of money = 3 Carelessness = 2 Illiteracy = 2 Should not be examined by male health worker = 1 God the cause = 1 Stubbornness = 1 Lack of care =1 Abusive staff = 1	Important=2 Problem solving=2 Free services =2 Good acceptance =1	Head of household/husband approval= 17 Lack of money = 25 No challenge = 8 Not enough doctors=6 Distance to facility =6 Attitude of health worker=5 Carelessness/illiteracy = 5 Cultural beliefs =4 Problem solving =2 Willingness to attend =2 Free services =2 Afraid of injection/ultrasound =2 Important =2 Male health worker bias= 2 God the cause = 1 Stubbornness = 1 Lack of care =1

Note: n/a = question not applicable to the sub-group

Appendix XI: Most frequent words/concepts used to provide reasons pregnant women do not attend ANC, type of services received for those who attend, what can be done to increase uptake, and thoughts about community outreach in Kebbi state				
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductive age**	**Workers workers/other stakeholders**	**Total Combined**
Reasons pregnant women not attend ANC				
No husband financial support = 4 Money problem = 1	Shame = 7 No money for transport = 4 No money for drugs = 3l = Distance = 3 Husband's disapproval = 2	Financial reasons = 4 No husband support = 2 Carelessness = 2 Male doctor bias =1 Distance =1	Poverty =6 Difficult transportation=5 Indirect cost =4 Culture/religious belief =2 Husband not support=1 Attitude of health workers =1 Access to health facility =1	No money for drugs =35 Distance/transportation=9 Indirect/transport cost =7 Shame =7 Poverty =6 Culture/religious belief =2 Carelessness =2 Attitude of health workers =1 Access to health facility =1
Services received by pregnant women who attend ANC				
Free drugs/prescription = 6 ANC = 2 Health talk = 1 Good hygiene = 1	Drugs =2 Never gone = 8	Drugs/injection = 10 Health worker care =2 No insult = 1	Not applicable (N/A)	Drugs/injection = 18 Never attended =8 Health talk/ANC=3 Health worker care =2 Good hygiene =1 No insult = 1
Ways to increase pregnant women's ANC attendance				
Money support = 4 More free drugs = 2 Increase hospital staff =2 Hospital rehabilitation = 1 Money for transport = 1 Free net = 1	More health workers =10 Gifts = 7 Advise husband =6 Reduce offensive talk/care =5 Outreach = 2 Enlightenment/advise =2 Provide amenities = 1	Mosquito net = 3 Free drugs = 3 Water =1 Care = 1 Chair in hospital = 1	Not applicable (N/A)	More health workers =12 Provide gifts (e.g. mosquito nets) =11 Advice husbands =6 Health worker reduce offensive talk/care = 6 Money support = 5 More free drugs = 5 Hospital rehab/amenities = 4 Outreach =2 Enlightenment/advise = 2
Opinion on community outreach				
Women will attend = 2	Support community outreach = 12	Community outreach good = 11		Support community outreach =23 Women will attend =2

Appendix XII: Most frequency of words/concepts used to deiscribe sources of health information, and influences on decision making on pregnant women use of ANC in Kebbi state						
Pregnant women using ANC	**Pregnant women not using ANC**	**Women of reproductiv e age**	**Men**	**Community/Rel igouus leader**	**Workers workers/other stakeholders**	**Total Combined**
Sources of health information in the community						
Town crier = 9 Radio = 8 Neighbor = 1 Television = 1	Radio = 5 Television = 4 Community health worker= 3 Town criers = 3 Newspapers = 1 Posters = 1 Hospital = 1	Health worker = 2 Town announcer =2 House to house =1 Radio = 1 Television =1 Friends = 1	Town crier = 12 Radio =4 Health workers = 3 Television = 2 Phone = 2 BCN =1 Neighbor = 1	Town announcers = 8 At mosque/religious leaders =8 Community leaders =4 Women house to house =3 Radio = 3 Mid-wives = 3 Husband = 2 When outreaches at home = 2	Use community health workers =2 Radio =1 Television=1 Community volunteer =1	Town announcers = 20 Radio = 17 At mosque/religious leaders =8 Television =6 Use community health worker =6 Hospital/mid-wives = 4 Community leaders =4 Women house to house =3 Husband = 2 Outreaches at home = 2 Newspaper/poster =2 Neighbor =1
Preferred sources of information on malaria						
Hospital = 2 Town crier = 3 Radio = 1 interpersonal = 1	Health workers = 5	Health worker = 3 Pregnant women/childr en =12 House visitation = 1 Radio = 1	Radio =3 Town announcer = 2 Mosquito net = 1 Spray gutters = 1 Community leader =1	Town announcers =4 Posters = 2 Health workers = 2 At mosque =1 Radio = 2 Television = 1 Ceremonies =2 Volunteers =1	Community health volunteer =2 Town crier =1	Town announcers =9 Posters = 2 Hospital/Health workers = 13 Pregnant women/children =12 At mosque =1 Radio = 7 Television = 1 Ceremonies =2 Community leader =1 Volunteers =1
Decision maker on ANC for pregnant women						
Head of household =6 Father/mother in-law 4 Woman herself = 1 Joint decision = 1	Husband = 8 Father in-law/in-law =2 Health workers = 1 Elder in the house = 1 Village heads = 1 Nobody = 1	Head of household/hu sband =15 In-laws/mother in laws=3 Friend = 1	Husband = 11 Father/mother in-law =2 Woman = 1 Relatives =1 Men advice women on ANC =1 Men advice their men on ANC =1	Health of household/husban d = 3 Community leader = 3	Health workers=2 Village head s=1 Head of household=1 Religious leaders=1 Good counseling =1	Head of household/husband=45 Father/mother in-law =10 Religious/community leaders=7 Health workers=4 Woman herself=2 Relatives/friends =2 Men advice men =1 Joint decision =1

Note: n/a = question not applicable to the sub-group

Appendix XIII: List of Qualitative Tools

1. Key Informant Interview (KII) Community Members Guide
2. Focus Group Guide for Men
3. Focus group Guide for Pregnant Women Using ANC
4. Key Informant Interview with Health Workers
5. Key Informant Interview with Program Implementers & Other Stakeholders

Appendix IX: List of Field Team

Zamfara State

1. Sani Njobdi	Consultant (fieldwork)
2. Ahmed Ibrahim	Resident Consultant for MAPS (Interviewer-KIIs)
3. Abdurrahman Muhammad	Facilitator
4. Kabiru Ibrahim	Facilitator
5. Yahya Usman	Facilitator
6. Murtala Aliyu	Note taker/recorder
7. Ashiru Halilu	Note taker/recorder
8. Munzali Usman	Note taker/recorder

Kebbi State

1. Sani Njobdi	Consultant (fieldwork)
2. Garba Salihu Abubakar	Facilitator
3. Sunday Cletus	Facilitator
4. Danjuma Ijarafu	Facilitator
5. Susan Akande	Note taker/recorder
6. Halima Abubakar Tahir	Note taker/recorder
7. Nora Simon	Note taker/recorder

9. References

1. National Population Commission [Nigeria], National Malaria Control Programme [Nigeria], and ICF International. 2012. *Nigeria Malaria Indicator Survey 2010*. Abuja, Nigeria: National Population Commission, National Malaria Control Programme, and ICF International.

2. Jamison, D., W.H. Mosley, A. Measham, and J.L. Bobadilla. 1993. *Disease control priorities in developing countries.* New York: Oxford University Press.

3. National Population Commission [Nigeria, 2000], 2000. *Nigeria Demographic and Health Survey 1999.* Calverton, Maryland: National Population Commission and ORC/Macro.

4. National Population Commission (NPC) [Nigeria] and ORC Macro. 2004. *Nigeria Demographic and Health Survey 2003.* Calverton, Maryland: National Population Commission and ORC Macro.

5. National Population Commission (NPC) [Nigeria] and ICF Macro. 2009. *Nigeria Demographic and Health Survey 2008.* Abuja, Nigeria: National Population Commission and ICF Macro.

6. National Population Commission (NPC) [Nigeria] and ICF International. 2014. *Nigeria Demographic and Health Survey 2013.* Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

7. Catherine O. Falade, Olukemi O. Tongo, Oluwatoyin O. Ogunkunle, Adebola E. Orimadegun. 2010. *Effects of Malaria in Pregnancy on Newborn Anthropometry*. J Infect Dev Ctries 4(7): 448-453.

8. Richard Ndyomugyenyi, Stella Neema, and Pascal Magussen. 1998. *The Use of Formal and Informal Services for Antenatal care and malaria treatment in Rural Uganda*. Health Policy and Planning; 13(1): 94-102. Oxford University Press.

9. Denzin, N., and Y. Lincoln. (1994). *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.

10. Creswell, J. W. (1998). *Qualitative Inquiry and Research Design—Choosing Among Five Traditions*. SAGE Publications Ltd.

Butler-Kisber, L. (2010). Qualitative Inquiry: Thematic, Narrative and Arts-Informed Perspectives. SAGE Publications Ltd.