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The Perceptions of Women of Reproductive Age towards the Uptake of Focused Antenatal Care Services in Nakuru County

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Abstract

The desire to correct the poor implementation of traditional antenatal care (ANC) in developing countries resulted to the adoption of antenatal care model termed as Focused Antenatal Care (FANC). The goal of FANC is to ensure a good outcome for both the baby and mother and prevent complication during pregnancy, labor, delivery and postpartum period. It is characterized by four (4) main focused visits. Studies have shown that Kenya has long suffered from high maternal morbidity and mortality one of the strategies to reduce the high Maternal Mortality Rate (MMR) is effective implementation of FANC. The aim of this study was to identify uptake of FANC services among women of reproductive age with emphasis on their perceptions. The health belief model was adopted in the study to guide the researcher in understanding the respondents' behavior in seeking FANC services. A cross sectional study was carried out. Data collection involved use of a pre-tested questionnaire for quantitative data and Focused Group Discussion (FGD) guide for qualitative data. The sample size was 337 participants who had delivered within two years. Data analyses was done using SPSS version 21, chi square test was used to compare association between variables and content analysis for qualitative data. It was established that achieving or not achieving FANC is significantly associated ($p<0.05$) with high, moderate or low levels of perceived susceptibility (p =0.015), perceived severity (p =0.03) and perceived barriers (p <0.001).The study recommends that the ministry of health and other health sector should strengthen sensitization, information sharing and follow-up on FANC in a move to improve the uptake of FANC in Nakuru County.

Keywords: *Perceptions of women of reproductive age, Uptake of Focused Antenatal Care (FANC) services, Nakuru County.*

1.1 Background to the study

Worldwide 303,000 thousand women die each year as a result of pregnancy related complications (WHO,2015). An estimated 2.6 million babies are born still birth and 4 million more newborns die in the neonatal period (Cousens *et al*., 2011). Many of these deaths could be prevented through interventions delivered as part of basic antenatal care services such as micronutrient supplementation and nutrition education, malaria prevention, tetanus toxoid immunization, HIV and syphilis screening, and screening and treatment of pre-eclampsia and other hypertensive disorders (Ishaque et al., 2011).

Kenya has long suffered from high maternal morbidity and mortality rates (Otieno, 2013). The most recent estimates set the maternal mortality ratio at 362 deaths per 100,000 live births (KNBS, 2014), well above the SDG target of less than 70 per 100,000 live births by 2030 (UNICEF, 2015). The problem of high maternal mortality is driven, at least in part, by lack of access to quality maternal health services, including ante-natal, delivery, and post-natal services (Bourbonnais, 2013).Appropriate use of focused antenatal care (FANC) services can improve maternal health. The call for adoption of antenatal care model termed as FANC emanated from the desire to correct the poor implementation of traditional antenatal care (ANC) in developing countries. Focused Antenatal Care (FANC) is a comprehensive personalized care given to a pregnant woman which emphasizes on her overall health, birth preparedness and complication prevention (MoH, 2007).

It is a simple, timely, friendly, affordable and safe service to a woman. The goal is to ensure a good outcome for both the baby and mother and prevent complications during pregnancy, labor, delivery and the postpartum period. Studies have reported that pregnant women and their husbands are seen as ‘risk identifiers’ after receiving counseling on danger signs and they are also ‘collaborators’ with the health service by accepting and practicing the given recommendations (Teate et al., 2011). Therefore, studying the women’s involvement in observing all the four FANC visit is critical in determining positive outcome and prevention of complication during pregnancy, labor, delivery and post-partum period (MoPHS/MoMS, 2012). Against this background, this study is aimed at establishing the Perceptions of Women of Reproductive Age towards the Uptake of Focused Antenatal Care Services in Nakuru County.

1.2 Statement of the Problem

Proper uptake of FANC is one of the important ways in reducing maternal and child morbidity and mortality. In Nakuru County the maternal mortality ratio is 374/100,000 live births according to (UNFPA, 2013), which is way beyond the first target under SDG3 to reduce global maternal mortality ratio to less than 70 per 100,000 live births by 2030. Unfortunately, many women in Kenya do not receive proper FANC services (Pell et al., 2013). In Kenya the current uptake of FANC is at 57.6% with the highest uptake of FANC recorded in Nairobi County, at 73% which still fell short of the then millennium target goal of 100% (KNBS, 2014). Rift valley region is one of the largest regions in Kenya and a host to 14 counties.

Out of the 12 counties with a less than 50% attendance of the recommended four FANC visits, 6 are in Rift valley region. The recent uptake of FANC in the region is at 51% (KNBS, 2014). Nakuru County is a host to Kuresoi Sub-County which has had alarming low intake of FANC services with worrying trends in the past three years, as seen in

appendix 1. According to the latest survey on uptake of FANC services, Kuresoi Sub-County scores as low as 28% (KDHS 2015). In addition, few studies have been done on this area in Kenya and thus making the available literature limited. Understanding the determinants to this low uptake of FANC is required so as to improve uptake of FANC and reduce the maternal morbidity and mortality rates. This study therefore, aims to establish the Perceptions of Women of Reproductive Age towards the Uptake of Focused Antenatal Care Services in Nakuru County.

1.3 Research question

What are the perceptions of women associated with the uptake of FANC services among women of reproductive age in Nakuru County?

1.4 Hypothesis

H0: There is no significant relationship between women's perception and uptake of focused antenatal care among women of reproductive age.

1.5 Research Objective

To determine the perceptions of women of reproductive age towards the uptake of FANC services in Nakuru County.

1.6 Conceptual framework

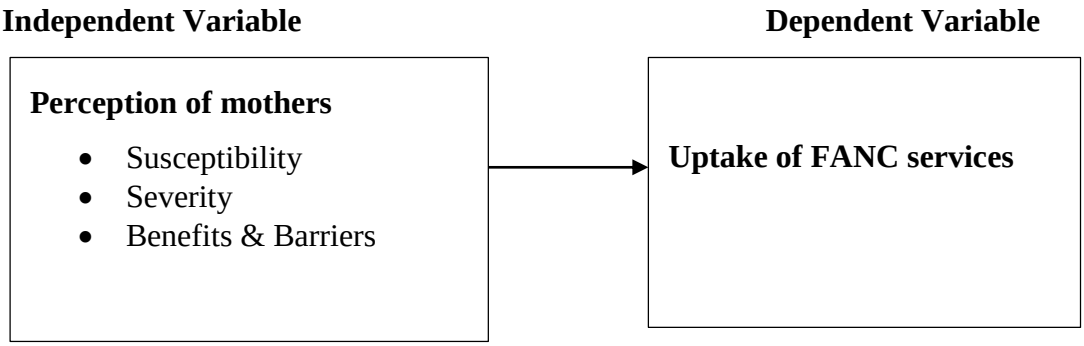

Figure 1: Conceptual framework.

2.0 Literature Review

2.1 Maternal Health

Maternal health is defined as the health of women during pregnancy, childbirth, and the postpartum period. It encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to reduce maternal morbidity and mortality (Toure et al., 2012). The risk for maternal death (during pregnancy or childbirth) in sub-Saharan Africa is 175 times higher than in developed countries, and risk for pregnancy-related illnesses and negative consequences after birth is even higher (WHO, 2014) .

In developing countries, complications of pregnancy and child birth are the leading causes of deaths among women of reproductive age (Say et al., 2014). These deaths can be prevented through provision of focused antennal care to pregnant mothers (Koch, 2013).In Kenya complications of pregnancy, childbirth and the puerperium are the

leading causes of inpatient morbidity and mortality in females of reproductive age (WHO & UNFPA 2014).

2.2 FANC in Kenya

Kenya introduced the comprehensive FANC service package as recommended by WHO, with additional components to respond to national health needs. The new components included PMTCT, intermittent presumptive treatment of malaria, developing an individual birth plan, TB screening, detection and treatment, and education on various topics, including rest, nutrition, and exercise in pregnancy, breastfeeding information, family planning, and planning for postpartum care (MoPHS/MoMS, 2012) Guidelines specified the appropriate times for providing specific services and education, for example, measuring blood pressure and education on nutrition at all four visits; and assessing the fetal position and providing information on family planning at the third and fourth visits (Ayiasi et al.,2014).

2.3 The health belief model

The Health Belief Model (HBM) was developed in the early 1950s to understand the failure of people to adopt disease prevention strategies or screening tests for the early detection of disease. The HBM derives from psychological and behavioral theory with the foundation that the two components of health-related behavior are; the desire to avoid illness or conversely get well if already ill and the belief that a specific health action will prevent or cure illness (Rosenstock, 1974). This study was based on HBM theory to identify the determinants of FANC utilization .HBM believe that ultimately, an individual's course of action often depends on the person's perceptions of the benefits and barriers related to health behavior (Bandura, 1977). The HBM was used in this study to explain the utilization of health services being dependent on people's perceptions.

2.4 Empirical Review

2.4.1 Perceived Susceptibility and the uptake of FANC services

The probability of seeking health interventions among people will increase proportionately to the increase in the level of perceived susceptibility and people will not change their health behaviors unless they believe that they are at risk of contracting a health problem (Sebaya, 2012) e.g. antenatal women are more likely to seek antenatal care services if they believe that they are at risk of developing pregnancy related complications. This is well illustrated in a study were women below 35 years made frequent antenatal visits to monitor the growth of their unborn babies compared to older, multiparous women who had not experienced previous antenatal problems who made fewer visits. (Thubelihle et al., 2011).

These findings agree to another study conducted at Geroka hospital in New Guinea, where 80% of the participants acknowledged that there was a possibility of complications during pregnancy and that going to FANC was a way of finding out whether or not they were healthy in their pregnancy (Sebaya, 2012).

In another study in Nigeria, 77% of pregnant women reported that only the pregnant women who are likely to have problems requiring treatment by a doctor should start clinic from the first trimester, hence the late initiation of ANC(Adeniyi, 2013). Similarly the perceived lower risk associated with births of higher order may explain the greater odds of inadequate visits among multifarious women as higher parity

women may not feel the need to use antenatal services, due to their accumulated pregnancy experiences and knowledge of the birthing process (Chama, 2015).

2.4.2 Perceived Severity and the uptake of FANC services

The probability that a person will change his/her health behavior to avoid a consequence depends on how serious he or she considers the consequence to be, for instance pain, handicap, death (Brown et al.,1992). In a study conducted in Uganda, among mothers having under five children a quarter of the mothers reported having lost at least one child in the years preceding the current baby which resulted to them seeking antenatal care early enough in their recent pregnancy (Richard, 2011).

In another study conducted in Zambia, although all the women in the selected sample had at least one ANC visit, 40% had three or fewer visits and more than 80% did not have antenatal check-ups in their first trimester because they felt it was not necessary (Koch, 2013). These results suggest that, even though the objective of increasing ANC coverage to all women has been achieved, there are missed opportunities for early interventions, for instance the prevention of mother to child transmission of HIV/AIDS because too few women seek ANC in the first trimester as they do not perceive the dangers of not utilizing FANC in the first trimester.

2.4.3 Perceived Benefit and the uptake of FANC services

Research has shown that it is difficult to convince people to change a behavior if there isn't something in it for them (Redding, 2013), For instance a study conducted in Malawi showed that majority (85%) of the participating women were assured of receiving vaccines, supplements and malaria prophylaxis by attending FANC clinic (Banda, 2013). Focused antenatal care is considered to be effective in improving outcomes for pregnant women and their babies (MoH, 2007). Booking for antenatal care before 16 weeks gestation is recommended to ensure that women do not miss interventions, monitoring and screening that might benefit their health and that of their babies (Banda, 2013)

A study conducted among pregnant women on the reasons why they attended focused antenatal care revealed that 78% wanted to seek care for themselves, seek care for their unborn children as well as to receive education or expected health treatment (Sebaya, 2012). These findings are similar to a study conducted in Nigeria were 60% of the women reported their reasons for attending antenatal care was to secure a place of delivery at the hospital which they believed would be facilitated by attending ANC and also to receive health education in relation to pregnancy. These findings indicate that the women were attending the FANC clinic due to the expected benefits.

2.4.4 Perceived barriers associated with uptake of FANC

One of the major reasons people don't change their health behaviors is that they think that doing so is going to be hard. Sometimes it's not just a matter of physical difficulty, but social difficulty as well (Redding, 2013). In view of this study ability of a pregnant woman to seek FANC services will depend on her ability to overcome the expected barriers. Studies have highlighted common barriers to the uptake of FANC to include, complexity of related procedures in the facility, lack of knowledge regarding the purpose and importance of FANC services, preference for local services, lack of resources to travel to services outside the community, women's perception that health care workers do not treat them respectfully and sensitively as individuals with complex needs, failure to provide professional interpreters when needed and concern that cultural preferences for female health care staff may not be respected (Banda, 2013).

Studies have also shown that use of antenatal care is infrequent for unwanted and mistimed pregnancies; even women who use antenatal care frequently appear to be less consistent if a pregnancy is mistimed (Pell et al., 2013). In other studies, women who required to get permission from their husbands had significantly fewer than required number of ANC visits. (Begum *et al*.2014; Sibiya *et al*.2018; Callixte *et al* 2017; Adeniyi and Erhabor, 2015).

In another study conducted in Japan among pregnant women on their utilization to FANC, the researcher found out that 93.4% mentioned that they had no time to visit the ANC, 83.8% reported that they felt they were in sufficiently good health, 74.3% said that they were embarrassed, while 71.3% reported that they lived too far away from an ANC service (Yang ye, 2010). In Kenya barriers to ANC uptake are not different from global and developing countries as a study by (Banda, 2013) showed that the use of antenatal care in Kenya is associated with a range of socio-economic, cultural, reproductive factors, availability and accessibility of health services, desirability of a pregnancy, however there is very little known about uptake of FANC in Kenya and thus the interest to study this area.

3.0 Materials and Methods

3.1 Research design

A cross sectional descriptive study design was used to aid an investigation of the uptake of FANC among women of reproductive age in Nakuru County. The study used both qualitative and quantitative approaches in data collection to give a better understanding of the research question being studied as suggested by Cottrell & McKenzie (2011).

3.2 Study population

The study population was all women of reproductive age in Kuresoi North Sub-County.

3.2.1 Inclusion criteria

All women of reproductive age in Kuresoi North Sub-County within two years post-delivery who consented to participate in the study, or whose guardian assented for their participation (for women less than 18 years).

3.2.2 Exclusion criteria

All women of reproductive age in Kuresoi North Sub-County within two years post-delivery who did not consent to participate in the study, or whose guardian did not assent for their participation (for women less than 18 years).

Mothers whose pregnancy was classified as high risk thus requiring more antenatal follow up and those who were more than two years post-delivery were also not included in the study.

3.3 Sampling technique and Sample size

For quantitative data, three hundred and forty (340) women were selected to participate in the study.

3.4 Research Instruments

Interviewer administered questionnaires were used to collect quantitative data. The questionnaires were with open and closed ended questions in English, but translated to Kiswahili which is the language that the study participants were proficient in.

3.5 Pre-test

A pre-test was carried out to test the validity of the questionnaire at Nyota ward a neighboring ward to the study area.

3.6 Data analysis

All filled data collection instruments were checked for completeness at the end of every day's activity in the field and then filed by the researcher.

3.6.1 Quantitative data

The data was coded and entered into a SPSS after which data cleaning was done to ensure completeness and remove any wrongly entered character. A validation of the data was done to ensure only valid data is analyzed. Descriptive statistics used to describe the data includes percentages and frequencies. For hypothesis, testing chi-square test of association was used to test association between uptake of FANC and hypothesized factors deemed to affect utilization. Utilization of FANC were classified as Utilized or Not Utilized in accordance to WHO (2004) classification. Since the dependent variable binary (Utilized or Not utilized FANC), binary multivariate logistic regression was used to determine odds ratio, confidence interval and probabilistic values (p-value). The level of uptake of FANC services was computed using the number of visits pregnant women made as well as gestation age at which initial FANC visit was made by pregnant women.

3.6.2 Qualitative data

For qualitative data, content analysis was done, this involved coding and classifying data, also referred to as categorizing and indexing with the aim of making sense of the data collected and to highlight the important messages, features or findings. Analysis of FGD notes included verbatim transcription of the tapes. The raw data from the tapes and the notes were transformed in a well-organized set of information according to various themes. After the transformations of the raw data, they were ordered in relation to the discussion topics to complement the quantitative findings.

4.0 Results

4.1 Uptake of FANC services

The study found that majority of women (73.3%) begun attending ANC in their second semester and only 24.63% of the women attended the four FANC visits outlined by WHO (2004). The results also revealed that majority of women (97.92%) attended the 24-26 weeks FANC visit and four women (1.2%) did not attend any FANC. The results are as shown in Table 1 and figure 2 below.

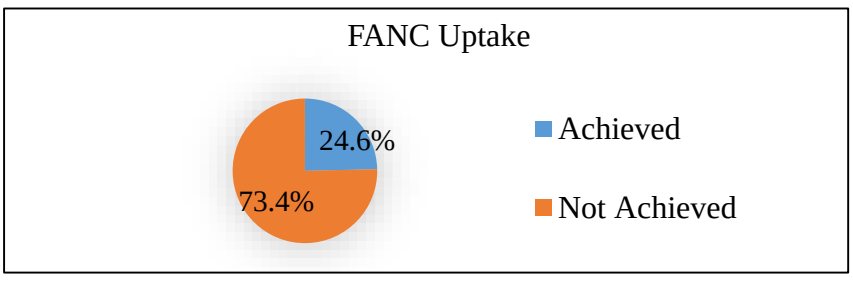

Figure 1: Uptake of FANC services

Table 1: FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

ANC attendance		Frequency	Percent
ANC initiation	0 – 3 months (1st trimester)	83	24.6
	4 – 6 months (2nd trimester)	247	73.3
	7 – 9 months (3rd trimester)	3	0.9
	Did not attend ANC	4	1.2
	Total	**337**	
ANC visits per semester [a]	0-16 Weeks	83	24.63
	>16-28 Weeks	330	97.92
	>28-32 Weeks	324	96.14
	>32-40 Weeks	316	93.77
	Did not attend any visit	4	1.19
FANC Uptake [b]	Achieved	83	24.6
	Not Achieved	254	75.4
	Total	**337**	

[a] Refers the number of women who reported ANC visits in each trimester, and cumulatively includes those who begun in the first until the last trimester.

[b] is based on WHO (2004) definition of FANC. Women whose frequency of ANC visits were four and were distributed across the 3 trimesters were classified as having achieved FANC. Those whose frequency of ANC visits were less than four and/or were not distributed across the 3 trimesters were classified as not having achieved FANC.

4.2 Perceptions towards FANC Services

The perceptions towards FANC services were measured in terms of their perceived susceptibility, perceived severity, perceived benefits and perceived barriers towards FANC. The respondents were given several 5 point likert scale questions, with responses ranging from 1-strongly disagree; 2-disagree; 3-neutral; 4-agree to 5-strongly agree. The results from these factors are presented below.

4.2.1 Women's perceived susceptibility to pregnancy, delivery and post-partum complications

The study found that the majority of the women did not perceive they were susceptible to pregnancy related complications (85.5%), labour and delivery complications (78.64%), or having a bad pregnancy outcome (71.8%). Approximately 57 % perceived they were susceptible to a difficult pregnancy (excessive fatigue, frequent headaches, mood swings, excessive vomiting among others) while 48 % of the women perceived they were susceptible to postpartum complications. The findings are illustrated in figure 3 below.

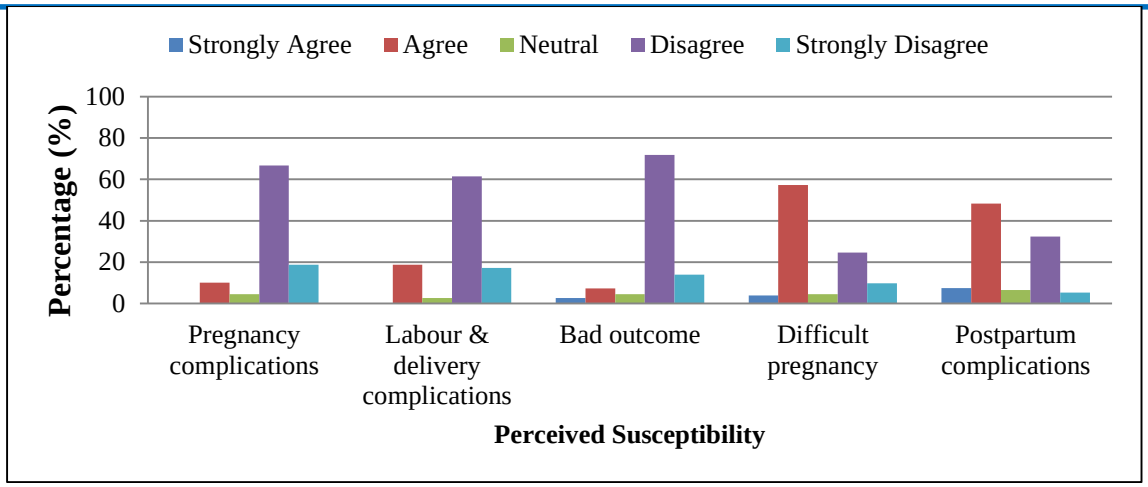

Figure 2: Perceived susceptibility pregnancy, delivery and post-partum complications among women of reproductive age in Kuresoi North Sub-county, Nakuru

Discussions held with the women revealed that their greatest fears were difficult pregnancies or developing postpartum complications.

"My greatest fear of getting pregnant is the possibility of developing post-delivery issues." (28-year-old housewife said)

"Any time I get pregnant I am not able to control my tempers, always fighting with the people around me for no good reason and everything around me smells bad, I really hate that experience." (29year –old hair dresser said)

4.2.2 Women's perceived severity of pregnancy, delivery and post-partum complications

The study found that 70.9% of the women perceived that not receiving FANC services could result in premature labour. Sixty-one percent of the women were pessimistic their pregnancy would not reach term if they did not attend FANC. Approximately 54% of the women did not perceive that they were at risk of getting a stillbirth. Approximately 55% of the women felt that complications they might experience during pregnancy and delivery would not be short lived, while 51% perceived that occurrence of pregnancy complications would not threaten their relationship with their partners or cause them to separate. Some women (44.2%) did not perceive that not attending FANC would result in recurrent health issues during their pregnancy period.

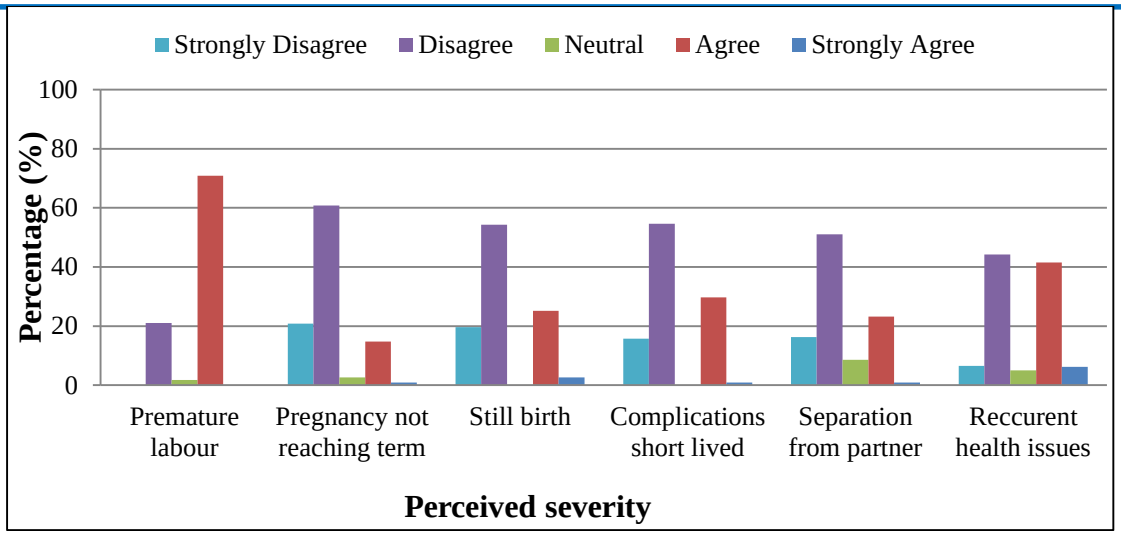

Figure 3: Perceived Severity of pregnancy, delivery and post-partum complications among women of reproductive age in Kuresoi North Sub-county, Nakuru

Focus group discussions with mothers revealed that some mothers were scared about the pregnancy process and the consequences of developing pregnancy, delivery and postpartum complications. Further discussions determined that they attended the clinics to detect risk conditions for better pregnancy outcomes.

*"My worst fears is that the pregnancy process is uncertain and sometime it can even lead to death of either the child or the mother". (*32-year old business lady said)

"Other outcomes are also very bad, I don't know what happened to my neighbor but since her last delivery she has difficulties controlling her bladder". (30-year-teacher shared)

4.2.3 Women's Perceived Benefits of FANC utilization

It was found that women's perceived benefits of attending the clinics included feeling good or comfortable during their pregnancy period (75.4%), reduced risk of pregnancy related complications (75.4%), increased the chances of early detection of risk conditions associated with pregnancy (75.7%), overcoming fear of labor and delivery (84.3%), learning about birth preparedness plan (78%) and receiving a wide range of preventive interventions such as PMTCT, TTV immunizations, Iron and Vitamin A Supplementation, ITNs, deworming for a good pregnancy outcome (73.3%). Also, 86.4% saw it as an opportunity to learn about pregnancy progress. The results are shown in the figure 5 below.

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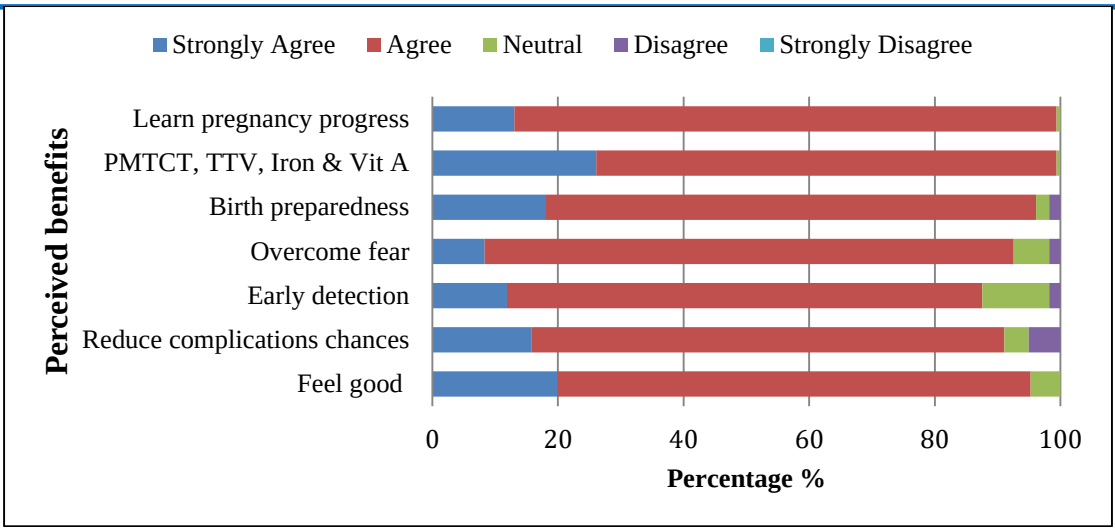

Figure 4: Perceived benefits of ANC attendance among women of reproductive age in Kuresoi North Sub-county, Nakuru

It was a common belief among mothers that completing the FANC visits would decrease chances of pregnancy related complications. Discussion with expectant mothers revealed that they attended all the FANC visits for regular checks to prevent any complications that might arise as a result of pregnancy. Further discussions also determined that most of the mothers attended the FANC visits so as to be educated on how to better manage the pregnancy and the challenges that comes with it. The women were also aware that failure to attend and achieve the recommended FANC could have serious health implications in the post delivery period.

"I attended the FANC clinic to regularly check my pregnancy to prevent any complications that might arise during the pregnancy." (28-year-old housewife said)

The women agreed that if they completed the four FANC visits they would learn about individual birth preparedness and reduce their chances of delaying to seek care during labor. During the FGD, the mothers were able to list the services that they received during FANC visits.

"I had never heard about a birth plan until my last pregnancy when I attended the FANC visits, it help me plan very well for my baby compared to my previous pregnancies that I never attended FANC". (26 –year old business lady said)

"FANC has been beneficial to me I got to know my HIV status, got some mosquito net that protected me from malaria and some drugs to boost my blood". (22-year old housewife)

Discussion with mothers revealed that they could not afford to miss ANC clinic visits since they were of great importance to them in checking their pregnancy progress whenever they become pregnant.

"*I could not afford to avoid attending the service since it was of great importance to me during pregnancy".* (31-year-old farmer)

4.2.4 Women's perceived barriers to FANC utilization

The perceived barriers to the utilization of FANC included lack of enough privacy (75.1%), tiring to attend the many FANC clinics (74.5%), financial constraint (60.8%), poor means of transport (60.8%), being tired (64.7%), uncomfortable being examined by male staff (62.6%), distance (58.8%), poor terrain (57.9%), dislike interacting with the doctors and nurses at the clinics (54.6%), lack of partner's permission (53.1%), shortage of medical staff (42.1%) and long queues (36.2%). The findings are shown in the figure 6 below.

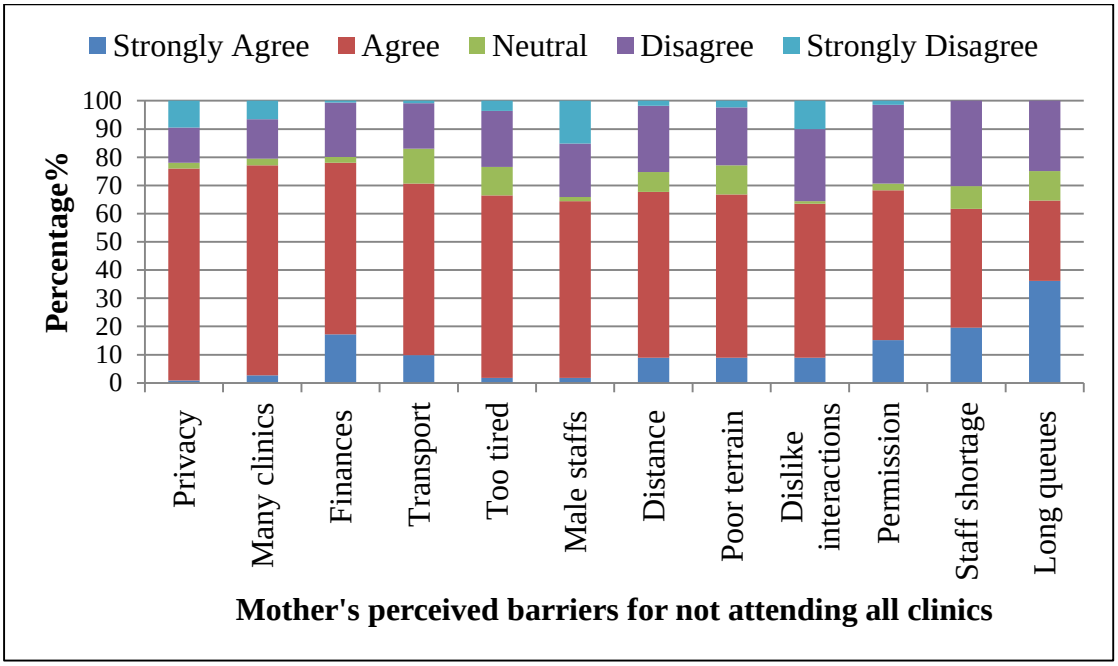

Figure 5: Perceived barriers to FANC utilization among women of reproductive age in Kuresoi North Sub-county, Nakuru

The focus group discussions showed that mothers were generally willing to attend the clinics though with some difficulties arising from fatigue, distance and lack of resources. In addition, the thought of interacting with the doctors and nurses at the FANC clinics bothered the mothers.

"The thought of interacting with the doctors bothers me because the antenatal care services providers are so rude that you end up going back where you have come from promising yourself not to come back due to the impression created by the doctors who are supposed to be polite to you." (38-year-old farmer said)

Group discussions with the mothers also brought to light other barriers to accessing FANC services among mothers such as: fear of diagnosis of HIV/AID, Culture and beliefs, ignorant of services being offered, inadequate resources to be used in transport and language barrier.

"Nowadays the doctors say that you must be tested for HIV when you get pregnant and the imagination that it could turn positive makes me avoid those clinics for my own peace of mind". (20-year-old receptionist said).

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4.3 Chi-square test of association between FANC uptake and women's perceptions

FANC uptake was significantly associated with perceived susceptibility (χ^2 (1) =5.044; *p* 0.015), perceived severity (χ^2 (1) =7.708; *p* 0.03) and perceived barriers (*p* 0.001). Perceived benefits were not significantly associated with FANC uptake. The results summary is presented in table 2 below.

Table 2: Association between perceptions and FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

		Uptake of FANC		Significance
		Achieved	Not achieved	
Perceived susceptibility	Low	77	210	χ^2 = 5.044; df = 1; *p* = 0.015[a]
	High	6	44	
Perceived severity	Low	49	146	χ^2 = 7.708; df = 1; *p* = 0.003[a]
	High	34	108	
	Moderate	29	103	
	High	35	129	
	Moderate	26	63	
	High	45	185	
Perceived barriers	Low	2	31	*P* < 0.001[b]
	Moderate	37	65	
	High	44	158	
Perceived benefits	Moderate	3	5	*p* = 0.311b
	High	80	249	

[a] *p*- value based on Chi-square test [b] *p*- value based on Fischer's exact test

4.4 Multivariate Logistic Regression between Perceptions and FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

Results from the logistic regression are presented in table 3. Perceived benefits was not significantly associated with FANC uptake from the chi-square and therefore was omitted from the regression analysis. Perceptions of high susceptibility to pregnancy, delivery and post-partum complications increased the likelihood of achieving FANC by 7.33 times (OR 7.33; CI: 3.125, 17.208; Std. error = 0.435; *p* 0.000) compared to perceptions of low susceptibility. Women who perceived that pregnancy, delivery and post-partum complications would be severe were 2.32 times more likely to achieve FANC (OR 2.32; CI: 1.554, 3.473; Std error =0.205; *p* 0.002) compared to women in the reference category. Women with a high level of perceived barriers were 0.28 times less likely achieve FANC (OR 0.28; CI: 0.199, 0.389; Std. error = 0.017; *p* 0.000) compared to those with low perceived barriers. On the other hand, women with moderate levels of perceived barriers were 0.57 times less likely achieve FANC (OR 0.57; CI: .380, .852; Std. error = 0.206; *p* 0.006) compared to the reference category.

Table 3: Multivariate logistic regression of Perception and of FANC uptake among women of reproductive age in Kuresoi North Sub-county, Nakuru

Variable	OR (CI)	*p*-value	Std. Err.
Perceived susceptibility (Ref: Low)			
High	7.33 (3.125, 17.208)	0.000	0.435
Perceived severity (Ref: Low)			
High	2.324 (1.554, 3.473)	0.002	0.205
Perceived barriers (Ref: Low)			
Moderate	0.569 (.380, .852)	0.006	0.206
High	0.278 (.199, .389)	0.000	0.17

5.1 Discussion

5.1.1 Women's perceived susceptibility associated with the uptake of FANC services

Despite the majority of women disagreeing that they are susceptible to pregnancy related complications, it was found that achievement of FANC was more likely among women who perceived they were highly susceptible to the complications. These findings supported a study by Sebaya (2012) in New Guinea, where the participants who acknowledged that there was a possibility of complications during pregnancy preferred attending the FANC to improve their pregnancy outcomes. Also, a study by Thubelihle et al. (2011) found that women preferred frequent clinic visits to be reassured that the baby was growing well and to learn its position and to improve their pregnancy outcomes.

Theory states that the probability of seeking health interventions among people will increase proportionately to the increase in the level of perceived susceptibility and people will not change their health behaviors unless they believe that they are at risk of contracting a health problem (Sebaya, 2012). When mothers perceive that they are at risk of developing complications during pregnancy, labour and post-partum period, they have a tendency of achieving FANC. Indeed, the few who achieved FANC reported that whenever they got pregnant their greatest fear was that they could develop pregnancy, delivery or even postpartum complications which influenced them to get regular check-ups to prevent any complications that might arise.

It is interesting that while the women were aware that failure to attend the number of ANC visits recommended to achieve FANC could have serious health implications in the post delivery period (as demonstrated by the FGDs), the majority of the women did not achieve FANC. Perhaps, it is because the majority did not perceive themselves as susceptible to complications, hence did not see the need to attend the number of ANC visits to achieve FANC. This reflects a gap between knowledge of pregnancy, delivery and post-partum risks and practice in relation to uptake of FANC and highlights the influence of other factors in ANC attendance.

5.1.2 Women's perceived severity associated with the uptake of FANC services

Women who strongly perceived that pregnancy, delivery or post-delivery complications could be severe were more likely to achieve FANC. Similar results were reported by (Koch, 2013), where more than 80% of women with low perceived severity did not have antenatal check-ups in their first trimester. This could be explained by the desire to decrease the consequence or seriousness of pregnancy complications and to have a good pregnancy outcome being a positive influence on women's uptake of FANC. Theory states that the probability that a person would change his/her health behavior to avoid a bad consequence depends on how serious he or she considers the consequence to be, for instance pain, handicap or death (Witte, 2013). This theory was confirmed by Cao et al. (2014) in a study, which established that any human being who believes that an action will decrease the susceptibility to a health issue or decrease it's seriousness would engage in that action.

The findings imply the need for more health education to women to highlight all the unexpected outcomes that can occur during the entire pregnancy, delivery or post-natal period and ways to mitigate the consequences from the same, for which compliance to the antenatal schedule as described by WHO is key.

5.1.3 Women's Perceived Benefits associated with the uptake of FANC services

Interestingly the study revealed that although the women understood the benefits of attending ANC, there was no influence on achievement of FANC. Some of the perceived benefits included, reduced risk of experiencing pregnancy related complications, increased chances of early detection of risky conditions associated with pregnancy; Increased opportunity to learn about individual birth preparedness and reduced chances of delaying to seek care during labor. Women also noted that attending ANC clinics allowed them to receive a wide range of preventive interventions such as PMTCT, TTV immunizations, Iron and Vitamin A Supplementation, SP, ITNs, hookworm treatment) for a good pregnancy outcome.

These findings support those from other studies where it was reported that women attend ANC fully to access essential services such as vaccines, supplements and malaria prophylaxis, monitoring and screening that might benefit their health and that of their babies, as well as to receive education (Banda, 2013; Sebaya, 2012). Another study reported that women believed that attending FANC was to help them secure a place of delivery at the hospital, which they believed would be facilitated by attending ANC (Mbai, 2015).

Interesting to note is that the research findings showed that the women's perceived benefits of FANC were not significantly associated with its uptake. This finding highlights a knowledge-practice gap, which could be a result of the perceived barriers reported by the women and points to the need to go beyond awareness creation about FANC by reducing other barriers its uptake so that the pregnant women can assess the anticipated benefits.

5.1.4 Women's perceived barriers associated with the uptake of FANC services

Perceived barriers decrease the likelihood of FANC achievement; women with a high and moderate levels of perceived barriers were less likely to achieve FANC compared to those with lower levels of perceived barriers. The findings are in agreement with those of Brenda (2013) where lack of resources to travel to services outside the community, accessibility of health services and women's perception that health care workers do not treat them respectfully were identified as barriers to achieving FANC. Indeed, lack of finances was found to be one of the barriers reported by most women in this study (60.8%). Other studies also reported the cost of attending clinics in terms of travel and lost time, embarrassment and discomfort with the idea of physical and vaginal examination by medical male practitioners, staff shortages and distance as influencing uptake of ANC services (Oon et al., 2011; Koch, 2013; Yang, 2010).

Most of the barriers mentioned by the women in this study have also been reported in other studies as seen in the preceding paragraph as barriers to ANC attendance and FANC achievement. This study has also shown that unemployment and lack of permission from spouses negatively influenced ANC attendance and FANC achievement. Although the Linda Mama programme reduces the financial burden in accessing maternal care services at the hospital, much more needs to be done to address other non-financial barriers like poor means of transport, poor terrain, long distances to health facilities, low male involvement in antenatal care, poor staff attitudes, long waiting times and shortage of staff in the facilities.

This also reinforces the need for the policy makers and practitioners to focus their efforts on countering perceived barriers through introduction of mobile clinics, outreach services targeting the pregnant women as well as improving the road network to make it more friendly or usable for the community, increasing health facility staffing, and finding innovative means to encourage male involvement to improve FANC uptake.

5.2 Conclusion

The study concluded that perceptions of high susceptibility to pregnancy, labor and post-natal related complications, of high severity of the consequences that could result from pregnancy, labor or post-natal complications increase the likelihood of FANC uptake. On the other hand, perceptions of moderate to high barriers to the uptake of FANC decrease its uptake. The alternative hypothesis that women's perceptions are associated with the uptake of focused antenatal care among women of reproductive age is accepted. Perceived benefits were not significantly associated with uptake of FANC. However, while most of the women perceived that they were highly susceptible to pregnancy, labor and post-natal related complications, and that the complications would be severe, FANC uptake was still found to be low. This highlights a knowledge- practice gap that needs to be addressed.

5.3 Recommendations

To address the knowledge-practice gap between perceptions of susceptibility, severity and benefits of FANC and its uptake there is a need to go beyond awareness creation about FANC by reducing other barriers its uptake so that the pregnant women can assess the anticipated benefits.

References

Adeniyi F. and Erhabor S. (2015). Barriers to antenatal care use in Nigeria: evidences from non-users and implications for maternal health programming.

Ayiasi, R. M., Kasasa, S., Criel, B., Orach, C. G., & Kolsteren, P. (2014). Adherence to four antenatal care visits and newborn care practices among lactating mothers in rural Uganda.

Banda, C. L. (2013). *Barriers to utilization of focused antenatal care among pregnant women in Ntchisi District in Malawi.* Unpublished Masters, University of Tampere.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review, 84*(2), 191.

Begum N,Rahman M, Nayan S, Zinia S and Khan Z .(2014).Utilization of Antenatal care Services in a selected Rural area in Bangladesh

Brown, L. K., DiClemente, R. J., & Park, T. (1992). Predictors of condom use in sexually active adolescents. *Journal of Adolescent Health, 13*(8), 651-657.

Callixte Y, George B, Rebero S.(2017).Barriers to Antenatal Care Services Seeking in Africa.

Cottrell, R., & McKenzie, J. F. (2011). *Health Promotion & Education Research Methods: Using the Five Chapter Thesis/Dissertation Model*: Jones & Bartlett Publishers.

Ishaque S, Yakoob MY, Imdad A, Goldenberg RL, Eisele TP, & ZA, B. (2011). Effectiveness of interventions to screen and manage infections during pregnancy on reducing stillbirths: a review. BMC Public Health.

KNBS, M., KEMRI,NACC and NCPD. (2014). Kenya Demographic and Health Survey (2014 KDHS).

MoPHS/MoMS. (2012). National guidelines for quality obstetrics and perinatal care.

Otieno, A. W. (2013, 28 Sep 2013). Kenya's other great catastrophe: women and infants dying in childbirth. *The guardian*. Retrieved 19 October 2014, from http://www.theguardian.com/profile/aggrey-willis-otieno

Redding. (2013). The Transtheoretical model and stage of change. *Glanz, K, Rimer, BK and Lewis, FM (2002) Health Behavior and Health Education: Theory, Research, and Practice (3rd edn), Jossey-Bass, San Francisco*.

Rosenstock, I. M. (1974). Historical origins of the health belief model.

Sebaya, H. P. K., Sue Gillieatt and Michael P. Alpers,Gail (2012). Antenatal care in Goroka: issues and perceptions. *Papua New Guinea Medical Journal, Volume 47, No 3-4, Sep-Dec 2012*.

Sibiya M. Thembelihle S, Patience N and Thandeka J.b (2018).Access and utilisation of antenatal care services in a rural community of eThekwini district in KwaZulu-Natal

Teate, A., Leap, N., Rising, S. S., & Homer, C. S. E. (2011). Women's experiences of group antenatal care in Australiaâ€"the CenteringPregnancy Pilot Study. *Midwifery, 27*(2), 138-145.

Toure, K., Sankore, R., Kuruvilla, S., Scolaro, E., Bustreo, F., & Osotimehin, B. (2012). Positioning women's and children's health in African union policy-making: a policy analysis. *Globalization and Health, 8*.

UNFPA, U. N. P. F. K. C. o. (2013). Kenya Population Situation Analysis.

WHO. (2014). The state of the World's midwifery report.

Witte K. (2013). Putting the fear back into fear appeals: The extended parallel process model. Communication Monographs

Yang ye. (2010). Factors affecting the utilization of antenatal care services among women in Kham District, Xiengkhouang Province, LaoPDR.