IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 9, Issue 4 Ser. X (Jul. – Aug. 2020), PP 38-43
www.iosrjournals.org

Factors influencing compliance to Focused Antenatal Care in Kisumu CountyReferral Hospital, Kenya

[1]Anne Ayieko Ibworo, [1]Vincent Ibworo
1. *Great lakes University of Kisumu*

Abstract:
Background: *Among populations served by a system of public funded health care, the barriers to compliance of Focused Antenatal care (FANC) are less understood, as universal uptake of these services have not been realized. The uptake of four recommended minimum ANC visits is still below average in most of the developing countries which calls for more studies to be conducted to elucidate factors associated to non-compliance.*
Methodology*: This study assessed the compliance of FANC among pregnant mothers in Kisumu County Referral Hospital. The study used a cross-sectional design and data was collected from the Antenatal clinic (ANC) and post-natal ward. A total of 258 mothers attending ANC and postnatal services were interviewed using structured and unstructured questionnaires.*
Results*: Only (31.4%) of mothers completed 4+ ANC visits and out of these, (45.7%) commenced ANC in the first trimester and made 4+ ANC visits as recommended by WHO which requires that pregnant mothers commence ANC care within 12-16 weeks. The majority (35.7%) of mothers made 2-3 ANC visits during their pregnancy with more than half (60.9%) having started 1st ANC visit in the second trimester; while (65.9%) of those who made one ANC visit started in the third trimester.*
Conclusion: *The study has shown that there is still low compliance to FANC despite several approaches put in place by government. The County government, health facilities and other stakeholders needs to re-strategize on how to address the predisposing factors and barriers to FANC to ensure increased uptake and compliance to FANC services.*
Key words: *Focused Antenatal Care, compliance, Trimester.*

Date of Submission: 09-08-2020 Date of Acceptance: 23-08-2020

I. Introduction

The World Health Organization (WHO) introduced a new approach to Antenatal Care called Focused Antenatal Care (FANC) in order to improve the care given to pregnant mothers. Its goal was to improve maternal and peri-natal health as well as improve the health and survival of infants as a step towards achieving Sustainable Development Goals (SDGs). Focused Ante-natal Care (FANC) was defined as the care provided by skilled health-care professionals to pregnant mothers and adolescent girls in order to ensure better health for both the mother and baby during pregnancy. WHO provided components of ANC as: risk identification, prevention and management of pregnancy-related or concurrent diseases, health education and health promotion. FANCis specific as regards the timing and content of antenatal care visits according to gestational age. Under the FANC guidelines, the first visit was recommended at 12 weeks of gestation, with subsequent visits at 20, 24, 28, 32, 36, 38 and 40 weeks of gestation. A minimum of four visits however was recommended with the first visit scheduled at 16 weeks, the second at 24 to 28 weeks of gestation and the 3rd and 4th visits at 32 weeks and at 36 weeks of gestation respectively [1].

Focused Antenatal Care was introduced following failure of the standard ANC model, to limit the number of visits to the clinic, restrict tests, clinical procedures and actions to those which would improve the outcome of both the mother and the newborn. FANC model aims to provide pregnant mothers with respectful, individualized, person centered care at every contact and to ensure that each contact delivers quality services and offers psychosocial and emotional support to the beneficiaries [1]. To prevent or identify and treat conditions that may threaten the health of the newborn and/or the mother, and help a woman to approach pregnancy and birth as a positive experience, and to a large extent it helps to provide a good start for the newborn child [2] However, despite trails that were undertaken which led to reduced clinic visits to a minimum of four in normal pregnancy, many countries still experience poor compliance.

The guidelines stipulate that only examinations and tests that serve an immediate purpose and that have been proven to be beneficial should be performed. It is estimated 295,000 mothers die worldwide each year as a result of complications from pregnancy, childbirth and abortion while 94% of these deaths were from low income counties with less than 6% of these deaths occurring in developed countries making maternal mortality

the health indicator with the greatest disparity between developed and developing countries. The situation is worst in sub-Saharan Africa which in 2017 accounted for 86%of global Maternal Mortality Rate and also suffered from the highest maternal mortality ratio of 533 maternal deaths per 100,000 live births, where the ratio is 1 in 45 lifetime risk compared to a risk of 1 in 5400 for mothers in developed regions. As compared to developed countries whose lifetime risk has reduced, Sub-Saharan region has doubled from that in 2000 where the ratio was 1: 22 and 1: 7300 in developing and developed counties respectively [3]. FANC in itself does not reduce Maternal Mortality (MM) but reduces maternal mortality and morbidity indirectly through detection and treatments of pregnancy related or inter- current illnesses such as malaria, anaemia and syphilis which are prevalent and have an impact on maternal and neonatal health. For example, Malaria in pregnancy increases the chance of maternal anaemia, abortion and intra uterine fetal death (IUFD). In addition, ANC serves to increase the rate of births attended by skilled health workers and is an important entry point for other health programmes such as malaria, tuberculosis, nutrition and Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS). In this new antenatal care model (FANC), WHO recommended four targeted visits which meets the minimum standards needed by a pregnant woman. The first ANC visit offers an opportunity to establish baseline information on the general wellbeing of the mother and the unborn baby [4]. It serves to correctly assess the length of pregnancy (gestational age) in order to allow for accurate treatment of preterm labour; screen for genetic and congenital disorders; provide folic acid supplementation in order to reduce the risk of neural tube defects; screen and treat iron deficiency anaemia; screen and treat sexually transmitted infections; potentially capture non-communicable diseases such as diabetes and provide guidance on modifiable lifestyle risks such as obesity, malnutrition and occupational exposure[1]

There is evidence that the majority of expectant mothers in Kenya have access to ANC, 76% to 92% have only one ANC visit. The Kenya Demographic Health Survey [5] showed that slightly more than half (58 %) of pregnant mothers made four or more antenatal care visits during their pregnancy, an increase from 47% since the 2008-09 KDHS. However, the trend has been on the decline over the years where 4+ ANC visit was 63.9% in 1993, 60.8% in 1998, 52.3% in 2003 and 47.1% in 2009 according to UN statistics. In 2008/2009 less than half (47%) of pregnant mothers made four or more antenatal visits, with the likelihood of uptake of FANC among mothers who resided in urban areas being 60% as compared to their counterparts who resided in rural places at 44%. Uptake of FANC was also high among married mothers and those with formal employment up to three times as compared to the single mothers and those who were unemployed [6]. On the other hand, parity was associated with client satisfaction towards ANC services [7].

Despite WHO's recommendation that all mothers should initiate their first ANC visit in the first trimester, it's reported that as much as the last 2 decades had seen an increase in the number of mothers receiving early antenatal care, many mothers living in developing regions did not receive early antenatal care in 2018 (less than half of all mothers). This however, was an improvement from 1990 when less than half of all mothers – only 4 out of 10 – were estimated to have received early antenatal care in as much as it did not match that of developed regions with an estimated 85% of mothers commencing early ANC[8].Available data on effects of late antenatal care such as high rates of maternal mortality and high neonatal mortality, regions such as sub-Saharan Africa and Oceania still showed an estimated coverage of less than 25% by 2013, and also had the highest ratio of deaths of mothers during pregnancy and childbirth, as well as the highest rates of stillbirths and deaths of newborn infants [8].In Kenya, there is significant variation in ANC uptake across Counties with a much smaller proportion of mothers having made it to their first ANC visit within the first three months of pregnancy which translated to inadequate ANC use[9].

II. Materials and Methods

Study site and design: This was a descriptive-cross sectional study that examined factors influencing compliance to Focused Antenatal Care in Kisumu County Referral Hospital, Kenya. The County Hospital is located in Kisumu County, Kisumu Central District, Winam Division, Northern Sub-location, within the Township. This hospital offers primary healthcare services including; Maternal Newborn and Child Health, HIV Comprehensive Care Centre (CCC) services, Emergency Obstetric Care(EOC), Integrated Management of Childhood Illness and Prevention of Mother to Child HIV Transmission (PMCT). It also offers outpatient, inpatient, laboratory and radiology services. Kisumutown is the regional capital and an administrative, commercial and industrial Centre for the Lake Victoria basin. Situated on the shores of Lake Victoria, it's development was enhanced by the Victoria port and railway connectivity. The lake has been a great economic resource to the region and fertile agricultural land which has provided employment opportunities in various sectors such as the large-scale production of cotton, rice and sugar [10]. On average thedistance to health facilities was 5-8 kilometers which made it difficult for most people to access health facilities especially from the rural areas. In Kisumu County, the Doctor to population ratio is 1: 44,634 and Nurse to population ratio is 1: 2,383 against the recommended WHO standard of Doctor or nurse Population ratio of 1:435. The most prevalent diseases included malaria, upper respiratory tract infection, diarrhea and HIV/AIDS [10]. Kisumu

County HIV prevalence was at 16.3% against the national prevalence which was 4.9% [11]. Despite the County having several health facilities that provide health services, several problems affecting maternal and child health continue to affect ANC service uptake.

Sampling: The study used purposive sampling method to select Kisumu County Referral Hospital. This health facility is the main referral hospital in the County hence increased workload with wider representation of clientele from different geographical areas within the County. Random sampling method was used and the study subjects werepregnantmothersattending Antenatal Clinic including those who had delivered within 72hours (32 weeks' gestation – 72hours post-delivery) at Kisumu County Referral hospital. The pregnant mothers included in the study were those who had attended ANC at the health facility from the beginning of pregnancy. Those mothers who had been identified as having co-existing complications were exempted since they needed to make more than 4 ANC visits for normal and specialized care. All participants had to be in possession of an ANC card for verification of the number and timing of visits as well as components of healthcare received during the visits. A total of 1750 mothers attended Antenatal Clinic and post-natal ward in 2018 at Kisumu County Referral Hospital.

Sample size was determined according to the formula cited by Yamane Taro [12] in cases of finite population.

$n= N/1+N (e)^2$

Where n =required sample size

N = Population of mothers seeking ANC services in 2018.

Therefore, N= 1750

e = precision level (0.05)

$n= 1750/1+1750(0.05)^2$

$= 1750/1+1750(0.0025)$

$= 304$

The sample size was then reduced to 258 clients since the target population was below 10,000 as shown in the formula below.

$N=1+n/N$

Where n = sample size and N = population sample

$= 304/1+304/1750$

$= 333/1+ 0.175$

= 258 clients

These clients were randomly selected at the Antenatal Clinic and Post-natal ward.

Data collection*:* Data was collected using structured and semi-structured questionnaires. The questionnaires administered to eligible mothers assesseddemographic and socio-economic information such as: age, marital status, financial status, education, religion, ethnicity, residence, parity and number of ANC visits. Data was collected by two research assistant experienced in administration of research questionnaires.

Data processing and analysis: Quantitative data was edited by cross reading all questionnaires to ensure that all information was captured during data collection and that the data was consistent. Data entry and cleaning using Microsoft EXCEL and by running cross-tabulation respectively for accuracy with SPSS being used for data analyze. Univariate statistics was used to assess patterns of responses demonstrated by frequency distribution of the assessed factors

Ethical consideration: Before the study implementation, clearance to conduct research was obtained from the Great Lakes University of Kisumu Ethical Review Committee and permission was granted to conduct the study by Kisumu County Referral Hospital Medical superintendent. Prior to enrolment in the study, participants were informed of the aim, process, benefits and duration of the study in which they were free to choose whether to participate or not. Those willing to participate signed a written informed consent form to show acceptance for inclusion into the study. Participants were also guaranteed confidentiality of the information by observing anonymity of respondents. The principal researcher maintained sole access to all data collected.

III. Results

The objective of this study was to assess factors influencing compliance to Focused Antenatal Care in Kisumu County Referral Hospital, Kenya. The study looked at client demographic and socio-economic factors i.e. age, marital status, education, household finance, religion, ethnicity, parity, residence and number of ANC visits.

Table 1 shows that (31.4%) of 258 mothers had 4+ ANC visits and out of these, (45.7%) mothers commenced ANC in the first trimester and made 4+ ANC visits as recommended by WHO which requires that pregnant mothers commence ANC care within 12-16 weeks. The majority (35.7%) of mothers made 2-3 ANC visits during their pregnancy with more than half (60.9%) having started 1st ANC visit in the second trimester; while (65.9%) of those who made one ANC visit started in the third trimester.

Table 1: Compliance to FANCs 4+

No of ANC visits	No	Proportion %	First ANC visit in 1st Trimester	First ANC visit in 2nd Trimester	First ANC visit in 3rd Trimester
1	85	33	10 (11.8%)	19 (22.4%)	56 (65.9%)
2-3	92	35.7	32 (34.8%)	56 (60.9%)	4 (4.3%)
4+	81	31.4	37 (45.7%)	44 (54.3%)	0 (0%)

In Table 2, out of 81 clients who made 4+ visits, (31.3%) were teenagers, (39.2%) were young mothers as compared to youths (26.7%). Among primigravida mothers who attended ANC (32.5%) had 4+ visits, those in the second parity were (23.3%) while para three and above formed 36.7%. Single mothers who had 4+ visits were (21.6%) while (35.1%) were married.

Table 2. Compliance to FANC visit and predisposing factors

characteristic	Number of ANC visits (1-3)		Number of ANC visits (4+)	
	No	%	No	%
Maternal age:				
15-19	35	68.7	16	31.3
20-24	66	73.3	24	26.7
25-29	42	60.8	27	39.2
30-34	19	65.5	10	34.5
35-39	13	76.4	4	23.6
Marital status:				
Single	58	77.4	16	21.6
Married	117	64.9	65	35.1
Residence:				
Urban	134	62.9	79	37.1
Rural	41	95.3	2	4.7
Maternal education				
Primary	80	69.5	35	30.5
Secondary	67	76.1	21	23.9
Tertiary	28	52.8	25	47.2
Religion:				
None	5	71.4	2	28.6
Catholic	66	77.6	19	22.4
Protestant	80	58.8	56	41.2
Indigenous	17	80.9	4	19.1
Ethnicity:				
Luo	133	71.6	53	28.4
Non-Luo	42	60.0	28	40.0
HH financial status				
Stable	82	66.7	41	33.3
Not stable	91	69.4	40	30.6
Parity:				
Primigravida	79	67.5	38	32.5
Para 2	46	76.7	14	23.3
Para 3+	50	63.3	29	36.7

Table 3 shows half of middle aged mothers started ANC clinic in 1st trimester while (18.8%) of teenage mothers started the clinic in 1st trimester. 52% of para 3 mothers also started ANC clinic during the 1sttrimester. Majority of mothers (70.9%) without stable income and (50.9%) of those with tertiary level of education started ANC clinic in 1st trimester.

Table 3: Descriptive statistics on pregnant mothers who commenced ANC in the first trimester to 4th

Subjects characteristic	Total	First ANC visit in 1st trimester	Proportion of first ANC visit in 1st trimester (%)
Age			
15-19	53	10	18.8
20-24	90	24	26.6
25-29	69	26	37.6
30-34	29	15	51.7
35-39	17	6	35.2
Marital status			
Married	181	64	35.3
single	76	17	22.3
Parity			
Para 1	119	33	27.7
Para ii	60	15	25

Para iii	48	25	52
Para iv	31	8	25.8
Financial stability			
Stable	125	59	47.2
Non-stable	131	22	16.8
Maternal education			
Primary	117	25	21.3
Secondary	88	29	32.9
Tertiary	53	27	50.9
Residence			
Rural	43	12	27.9
Urban	215	69	32

IV. Discussion

This study established that Compliance of FANC 4+ visits still remains low at 31.4%far below the national compliance (48%) [13]. This could be due to lack of correct information on the importance of FANC by the mothers and or healthcare workers' negative attitude. This is in agreement with WHO's report which showed low attainment of WHO recommended minimum four ANC contact visits globally during the period 2014-2018 with Southern Ethiopia's reporting45% [14]. FANC's four-visit model provides a package of services that contributes to the health and well-being of mothers throughout pregnancy, childbirth and the post-natal period. This can be best achieved when pregnant mothers access first antenatal care within first trimester. Another study has also showed mothers at 28-33 years are more likely to comply with 4+ ANC visits as compared with other age groups [15].

This study confirmed that only (45.7%) of pregnant mothers who had four or more ANC visits started at the first trimester, while 54.3% of mothers who made 4+ visits commenced in the second trimester, relatively similar to WHO, 2003 report where 51% of the 65% of expectant mothers who had four or more visits, reported at the second trimester while 42% commenced in the first trimester and therefore received quality ANC service. This is in agreement with a study conducted in Malawi which showed majority of mothers for made 4+ ANC visit started in the second trimester [16]. This finding could be as a result of most mothers not being aware of their pregnancy during the first trimester hence the low uptake of ANC services.

In this study, mothers of younger age group (25-29 years) made the 4+ ANC visits as recommended by WHO more than those in teenage age (15-20 years) and those >29 years of age. This could be attributed to the confidence and the joy of carrying the pregnancy by the 25-29 years old mothers of whom majority are newly married and have a lot of support from their spouses. The finding is similar to a study conducted in South Africa [17], Asembo and Gem [18] which stated that mothers of young age groups had better compliance to ANC and were associated with better utilization of health care services. This reflects a reduced need for care due wrong perception on the role of ANC. The finding of this study also revealed that as parity increased compliance to 4+ visit and early initiation of ANC decreased. Primigravida mothers had better compliance to 4+ visits than their counterparts. This could be as a result of: the fear of the pregnancy outcome by the primigravida being their first time to carry the pregnancy; previous experience with ANC services at the health facilities by the multiparous and the assumption that all will be well best on the previous child birth experience. The findings are in agreement with a study done in Uganda which showed utilization of FANC was better in early parity as compared with increased parity [19]. Studies done in Ghana [20], Tanzania [21] and in Western Province-Kenya [22] revealed a reduction in ANC compliance with increasedparity, this is in agreement with a study done in Malawi which showed low utilization of FANC among pregnant mothers and postnatal mothers was influenced by higher parity [23]. Although according to Pricilla and colleagues there was no significant relationship between parity of mothers and ANC compliance [24].

This study also revealed mothers with tertiary level of education had better compliance to Focused Antenatal Care as compared to those with primary or secondary level of education. This could be because Mothers with higher education levels might be well informed of the importance of FANC hence the increased service uptake and compliance. This is also seen in a study done in Zambia where Mothers who had higher education level were more likely to attend at least four ANC visits compared to those with no education [25].Mothers education was also identified as predictors affecting Focused Antenatal Care service utilization hence encouraging mothers to acquire education at the local/community levels could improving the mothers' healthcare service uptake [26].Low uptake of 4+ ANC and poor commencement of ANC at first trimester was seen in mothers with non-stable financial status. This is in agreement with a study done in Kenya which showed the determinants of uptake of focused antenatal care being type of employment and household income [6]. Poor financial status and lack of economic empowerment for mothers interferes with utilization of maternal and child

healthcare services including FANC uptake [27]. Significant barriers to focused antenatal care service uptake included the mothers' income and financial stability [28].

V. Conclusion

This study has shown that there is still low compliance to FANC despite several approaches put in place by government. The health facilities together with the communities needs to intensify campaign awareness on the importance of FANC. County government and other stakeholders needs to re-strategize of how to address the predisposing factors and barriers to FANC at the health facility to ensure increased uptake and compliance to FANC services.

References

[1]. WHO (2016) WHO recommendations on antenatal care for a positive pregnancy experience. ISBN 978 92 4 154991 2
[2]. WHO (2003). What is the efficacy/effectiveness of antenatal care and the financial and organizational implications?
[3]. Trends in maternal mortality, UNICEF: 2000-2017
[4]. WHO (2002). Antenatal care randomized trial; manual for implementing new model. Geneva World Health Organization, (document (WHO/RHR/01.30).
[5]. Kenya Demographic Health Survey (KDHS) 2014
[6]. Gitonga, E. (2017). Determinants of focused antenatal care uptake among mothers in Tharaka Nithi County, Kenya. *Advances in Public Health*, *2017*.
[7]. Ibworo, V. O., Omondi, D., & Guyah, B. (2020). Client's satisfaction with maternal child health services in tier three public health facilities, Kisumu county, Kenya. *International Journal of Health, Medicine and Nursing Practice*, *2*(1), 19-30.
[8]. WHO (2017) Early Antenatal care visit: a systematic analysis of regional and global levels and trends of coverage from 1990 to 2013. The Lancet global health 2017 5: e 977-83
[9]. National Council for Population and Development (NCPD) 2018
[10]. Kisumu County Integrated Development Plan (CIDP) 2018-2022
[11]. Kenya HIV Estimates 2018
[12]. Yamané, T., (1995). Statistics: An introductory analysis. New York: Harper and Row.
[13]. Kenya Country Summary report, 2017.
[14]. Amare, Z. Y., Ahmed, M. E., & Mehari, A. B. (2019). Determinants of nutritional status among children under age 5 in Ethiopia: further analysis of the 2016 Ethiopia demographic and health survey. *Globalization and health*, *15*(1), 62.
[15]. Ashraf, F., Thaver, I. H., Imtiaz, F., & Ayub, A. (2017). Quality assessment of focused antenatal care service delivery in tertiary care health facility. *Journal of Ayub Medical College Abbottabad*, *29*(2), 219-224.
[16]. Mchenga, M., Burger, R., & von Fintel, D. (2019). Examining the impact of WHO's Focused Antenatal Care policy on early access, under utilisation and quality of antenatal care services in Malawi: a retrospective study. *BMC health services research*, *19*(1), 295.
[17]. Chege, J., and Askew I., (2005). Feasibility of introducing a comprehensive integrated package of antenatal care services in rural public clinics in South Africa.
[18]. Ouma, P., M, Van Eijk, Hamel, M., Sikuku, S., Odhiambo, F., Munguti, K., Crawfford, S., Kager, P., and Slutsker, L., (2010). Antenatal and delivery care in rural western Kenya: the effect of training health care workers to provide "focused antenatal care; Reprod Health. Vol. 7:1.
[19]. Achayo, A. O. (2018). Utilization of antenatal care services by mothers of reproductive age (15-49), at Kiryangdongo District Western Uganda.
[20]. Anya S., Hydara A. & Jaiteh L., (2008). Antenatal care in The Gambia: Missed opportunity for information, education and communication. *Pregnancy and Childbirth vol. 8*.
[21]. Mrisho, M., Obrist, B., Schellenberg, J., Haws, R., Mushi, A., Mshinda, H., Tanner, M. & Schelenberg, D. (2009). The use of Antenatal and post natal care: perspective and experiences of mothers and health care providers in rural southern Tanzania; *BMC Pregnancy and Childbirth*, vol. 9:10.
[22]. Eijk, B., Odhaimbo F., Ayisi G., Blokland, I., Rosen, D., Adazu K., Slutsker, L., and Lindblade, K., (2006). Use of antenatal services and delivery care among mothers in rural western Kenya: *Reproductive Healthjournal* 2006, volume 3:2.
[23]. BANDA, C. (2013). *Barriers to utilization of focused antenatal care among pregnant mothers in Ntchisi district in Malawi* (Master's thesis).
[24]. Pricilla, R. A., David, K. V., Siva, R., Vimala, T. J. C., Rahman, S. P. M., & Sankarapandian, V. (2016). Satisfaction of antenatal mothers with the care provided by nurse-midwives in an urban secondary care unit. *Journal of family medicine and primary care*, *5*(2), 420.
[25]. Muyunda, B., Makasa, M., Jacobs, C., Musonda, P., & Michelo, C. (2016). Higher educational attainment associated with optimal antenatal care visits among childbearing mothers in Zambia. *Frontiers in public health*, *4*, 127.
[26]. Ayalew, T. W., & Nigatu, A. M. (2018). Focused antenatal care utilization and associated factors in Debre Tabor Town, northwest Ethiopia, 2017. *BMC research notes*, *11*(1), 819.
[27]. Fawole, O. I., & Adeoye, I. A. (2015). Mother's status within the household as a determinant of maternal health care use in Nigeria. *African Health Sciences*, *15*(1), 217-225.
[28]. Roberts, J., Sealy, D., Marshak, H. H., Manda-Taylor, L., Gleason, P., & Mataya, R. (2015). The patient-provider relationship and antenatal care uptake at two referral hospitals in Malawi: a qualitative study. *Malawi medical journal*, *27*(4), 145-150.