Research Journal of Medical Science & Public Health
Vol. 2, No. 1, April 2015, pp. 1- 10
Available online at http://scitecpub.com/Journals.php

Research article

Assessment of Dropout Rate and Contributing Factors among Women Attending Antenatal Care in Samia Bugwe North Busia District: Health Facility Based Survey, June 2013

Wabwire Paul Francis

Affiliation: Busia District Local Government[1],

Address: P.O Box 124, Busia Uganda

Affiliation: Uganda Christian University (UCU) Mukono[2],

Faculty of Science and Technology, Department of Health Science,

Address: P.O Box 4, Mukono Uganda

Phone: +256-772-654659

E-mail: wabwirepaulfrancis@yahoo.com

Abstract

Utilization of Antenatal Care services and facility delivery is generally low and inadequate in many districts of Uganda and in many other developing Countries. It's a challenge and the success to promote uptake hangs on the ability to establish the possible influencing factors to the problem.

The objective of the study was to assess the level of dropout and identify the contributing factors to dropout rate of Mothers from the Antenatal Care Services in Samia Bugwe North Health Sub-District hence plan for improvement towards the utilization of services.

It was a descriptive, cross-sectional study conducted among 378 lactating women with their children attending Immunization clinics.

Data from all respondents was collected using a semi-structured questionnaire by interview. Data from the focus group discussions and key informants was collected using interview guide

The research detected a dropout rate of 55.9% and an average health facility delivery of only 39%. These findings were associated with low education level < P.7 (p-value 0.019), and mothers' gravidity (p-value 0.018) as client factors. Other associated factors include: - availability of Traditional Birth Attendant (48.9%), and family social-economic status. Younger women and those with secondary education were statistically more likely to use ANC.

Keywords: Antenatal Care, Dropout Rate and Facility Deliveries

Introduction / Background

Antenatal care service delivery started as early as the twentieth century and since then, it has been implemented worldwide in and out of health facilities and has had higher coverage rates relative to skilled care at birth and postnatal care [1]. Antenatal care is the support given to an expectant mother during pregnancy from first to third trimester by skilled health personnel as recommended by the goal oriented WHO model new approach that has come to be known as "four – visit" model [1]. The WHO model includes the 4^{th} to 5^{th} visits for pregnant women who are not in a state of ill-health or having any medical problems

Furthermore, it is one of the components of primary health care (PHC) package that is aimed at improving, promoting and maintaining maternal, foetal and neonatal health through early diagnosis and management of abnormal obstetrical conditions

However, despite its values, utilization of antenatal care services (ANCS) and health facility delivery still remains inadequate. Up take of ANCS and health facility deliveries are a challenge and the victory to uphold uptake depends on the ability to establish the possible contributing factors to the problem. Antenatal service utilization is noted to differ from country to country, region to region as associated with different factors. Antenatal care utilization in the developing countries is low at 65% as compared to developed countries which is at 97%. Delivery by skilled health service providers is at 53% in developing countries as compared to 99% in the developed countries, postnatal care utilization is 30% compared to 90% in developed countries [2]. [3] In a similar study found out that factors affecting utilization of antenatal care services among pregnant adolescents included: - long waiting hours, lack of education

and Long distances to Health Centre as the most causes of underutilization of ANC Services. The findings further showed that the majority (55%) of adolescent expectant mothers between 18-20 years attended most compared to other ages. More (62.5%) of interviewed mothers were residing in town and 35% were never married.

[2] In their study on 400 respondents found that 76% of women attended antenatal care. Women in urban attended antenatal twice more than the rural, women who were Muslims or other religions were more than 2 times likely to attend ANC clinic than women who were Christians and Women who were 25 or more years were more than 2 times likely to utilize antenatal than women who were 25 years or younger. This is in contrast to the findings of [3], in her study of factors affecting utilization of antenatal care services among pregnant adolescents in Kampala-Uganda.

[4], indicated that low utilization of Antenatal Care by mothers was associated with high parity and low husband education (High parity >4 & Low husband's education < P.7). ANC attendance was significantly influenced by Age, Parity, Less Education and area of (rural) residence. [5], in their study about factors affecting the utilization of antenatal care in developing countries, a study that involved Twenty-eight papers most commonly identified the following factors as affecting antenatal care utilization :- Maternal education and employment, having a history of obstetric complications, marital status, Husband's Education, House hold income, Media exposures, Cultural beliefs and ideas about pregnancy also had an influence on antenatal care use , Availability of services, Cost. Parity had a statistically significant negative effect on adequate attendance being in agreement with [4] (women of higher parity tend to use antenatal care less), there was an interaction with women's age and religion.

The 28 studies identified factors affecting use of ANC services which were categorized into seven themes: Socio-demographic factors, availability, accessibility, affordability, characteristics of health services, women's position in the household and society, and women's knowledge, attitudes, beliefs and culture.[6], of 635 participants, 90% visited the antenatal clinic (ANC) at least once during their last pregnancy. Most women (64%) first visited the ANC in the third trimester; a perceived lack of quality in the ANC was associated with a late first ANC visit. Women who did not visit any ANC were more likely to have < 8 years of education, and a low socio-economic status.80% (Eighty Percent) of women delivered outside a health facility; among these, traditional birth attendants assisted 42%, laypersons assisted 36%, while 22% received no assistance. Factors significantly associated with giving birth outside a health facility included: age ≥ 30 years, parity ≥ 5, low socio – economic status (SES), < 8 years of education, and > 1 hour walking distance from the health facility. Women who delivered unassisted were more likely to be of parity as in support of [4, 5]. [7], survey indicated high ANC - 1 of 94.9%, low ANC - 4 of 47.6% and moderate births attended by skilled health personnel / facility deliveries of 58%. Study by [8] in Ethiopia revealed that antenatal care service utilization in the area was 86.3%. However, from those who attended antenatal care service (68.2%) 406 started antenatal care visit during the second trimester of pregnancy and significant proportion 250 (42%) had less than four visits. Maternal age, maternal education as in agreement with [6], husband attitude, family size, and perceived morbidity were major predictors of antenatal care service utilization. Though the

antenatal care service utilization is high in the study population, 4 in 10 mothers did not have the minimum number of visits recommended by World Health Organization.[8]. [9] In his research involving 1113 participants, 54% received antenatal care for their recent delivery. Only 4% gave birth to their recent child in health facility and only 6% were assisted by skilled birth attendants (TBAs), Predictors of delivery places included Education, parity, family education, history of obstructed labour and ANC visits. This study confirmed that the proportion of antenatal care, institutional delivery and skilled birth attendant utilization were very low. The research [9] also revealed that, Economical, health facility related and socio-cultural factors were the most frequently identified contributors to the low maternal health care utilization. Use of skilled assistance depended on the mother and family education as education and material were significant in the utilization of ANC. Economic constraints, transport problems, inaccessibility of health facilities, lack of decision making power, cultural and traditional practices were also importantly noted predictors for seeking of maternal health care. [10] In their study carried out in Eastern Uganda, categorized the influencing factors along three different axes; - the health seeking process, Health services delivery; and the ownership of livelihood assets. [11] in his study noted than on average, only 16% of women used the full content of antenatal care. The utilization of the content of care was significantly associated with education of the mother and her partner, wealth status, location disparities, timing and frequency of antenatal visits, nature of facility visited, access to media, family planning, and utilization of professional care.

Emmanuel and Nathaniel, i**n** their study about determinants of antenatal care services utilization in Nigeria revealed that Education beyond primary level increases significantly the likelihood that a pregnant woman would complete at least four antenatal visits before delivery. The results also show that household wealth status has significant positive effect on the number of visits before delivery. There are significant differences in the number of antenatal visits determined by geopolitical zones and the place of antenatal also determines significantly the number of visits [12]

. [13]In their cross sectional study determined the predictors for health facility deliveries in Busia district of Uganda. The cross sectional survey involved 500 women in Busia who had a delivery in the past two years (from 16th November 2005 to 15th November 2007). The research identified eight independent predictors that favoured delivery in a health facility that included: - being of high socio-economic status, previous difficult delivery, parity less than four, preference of supine position for second stage of labour, preferring health workers to dispose the placenta, not having difficulty with transport, being autonomous in decision to attend antenatal care and depending on other people (e.g. spouse) in making a decision of where to deliver from [13] . Research conclusively suggested that in order to increase health facility deliveries there is need for reaching women of low social economic status and of higher parity with suitable interventions aimed at reducing barriers that make women less likely to deliver in health units such as ensuring availability of transport and involving spouses in the birth plan.

Antenatal care issues examined by [14] in their study / survey discovered the following in relation with their research topic: - High antenatal attendance of 94.4%, with 57.7% visiting initially during the Second trimester, 33.5% during third trimester as compared to [6] and 37.1% reporting ≥ 4 ANC visits. 40.8% of the mothers delivered their most

recent pregnancy outside the health facilities. Women who lacked post primary education were less likely to attend four or more ANC visits.

Earlier on a similar research /study by [15] was carried out that involved 769 women who were interviewed. The research revealed high Antenatal clinic attendance of 94.4% and with 57.7% visiting initially during the Second trimester, 33.5% during the third trimester and 37.1% reporting ≥ 4 ANC visits. 40.8% delivered their most recent pregnancy outside a health facility. Post-partum women who lacked post-primary education were more likely not to have attended four or more ANC visits. The findings were noted to be in close agreement with that in the study by [14] in Uganda rural community.

The aim of the study was to measure the level of antenatal care dropout / antenatal utilization, facility deliveries and identify the influencing factors to the dropout rate from the Antenatal Care Services in Samia Bugwe North –Health Sub- District Busia, Uganda.

The research reports about the existing rate of antenatal dropout, level of facility deliveries and the identified contributing factors. This will be used to plan for the solutions to the identified problem by the Busia district authorities hence increase in the uptake of antenatal services.

Materials and Method

A descriptive, cross-sectional, health facility based survey carried out during Nov 2012 – March 2013. For study implementation, both qualitative and quantitative research philosophies were employed. The project was guided by code of belief of two common but integrated theoretical frameworks in antenatal care services attendance:- the social cognitive theory and the stages of change model. The purpose of the qualitative component was to identify and explore antenatal utilization barriers and facilitators while that of the quantitative component was to identify antenatal dropout rate, level of facility deliveries, related factors and the practicability of the programme

The study was conducted among 378 lactating / breast feeding women attending immunization clinic across the health sub-district in the four health facilities offering antenatal care services. The research employed a probability sampling techniques with systematic sampling in the research population. Open- Epi version 2, calculator was employed to determine the sample size (n) for the research by use of the indicated equation: - Sample size n = [DEFF*Np(1-p)]/ [$(d^2/Z^2_{1-\alpha/2}$*(N-1)+p*(1-p)]. The rule of proportionality was applied to determine the respective total (N), expectant (E) and sample size (n) population of each facility as follows:-

Individual Facility Expectant Population (IFEP) - E

$$(\text{IFEP}) = \frac{\text{Total Expectant Population (E)}}{\text{Total HSD target population (N)}} \times \text{The individual facility population} \quad \ldots\ldots\text{Eqn. 1}$$

Individual Facility Sample Size (IFSS) - n

(IFSS)= $\frac{\text{Total HSD Sample Size}}{\text{Total HSD Expentant population}} \times \text{IFE} - \text{Population (IFEP)}$ ..……………... Eqn. 2

For example Busia health Centre IV

IFEP (E) = $\frac{7,808}{150,142} \times 70,631 = 3,673$ ……………….……………………..… Eqn. 3

IFSS (n) = $\frac{367}{7,808} \times 3,673 = 173$ …………………….………………………Eqn. 4

STATA Version 11 was utilized to analyze quantitative data by which the relationship**s** between the dependent and independent variables were established. The dropout rate was determined by establishing the difference between the total number of clients at ANC - 1 and ANC – 4 (369 Minus 158). From the outcome of the subtraction, the numerator and denominators were established and the rate of dropout determined as: - $\boldsymbol{Dropout\ rate} = \frac{\boldsymbol{ANC,1-ANC,4}}{\boldsymbol{Sample\ size\ (n)}} \times \mathbf{100}$.

The research employed both questionnaire and interview guides. Data was collect from individual participants, focus groups and key participants / respondents using questionnaire and interview guide respectively. A semi-structured in-depth questionnaire was administered to various participants independently after probability sampling criterion had been applied to select the sample population. Mothers were numbered on arrival on each day of data collection.

Quality of the data collection tool was ensured through pretesting before final use and also translating it into three commonly used local languages – Lusamia, Luganda and Kiswahili. Data measurement level was described under validity and reliability. The validity and reliability of data collection instruments was tested prior to carrying out the research.
Issues of ethical considerations were addressed with most emphasis to Privacy, Confidentiality, Informed consent and special consideration to the minors like the under 18 years, those not able to answer in any of the three stated languages.

Results and Discussion

This study considered a sample of 378 lactating mothers in immunization clinic in four Health Centres. Majority of mothers 36% (n=136) were in the age group of 20 to 24 years, whereas those aged below 20years were few 20.4% (n=77). There were more Catholics 32% (n=121), more Samia / Bagwe 42.6% (n=161). More married 94.4% (n=357) while 46.8% (n=177) had had their first or second deliveries/ babies. Majority of the mothers 69.5% (n= 269) had low Education level (< P.7), while 37.7% (n=142) of mothers were peasant farmers

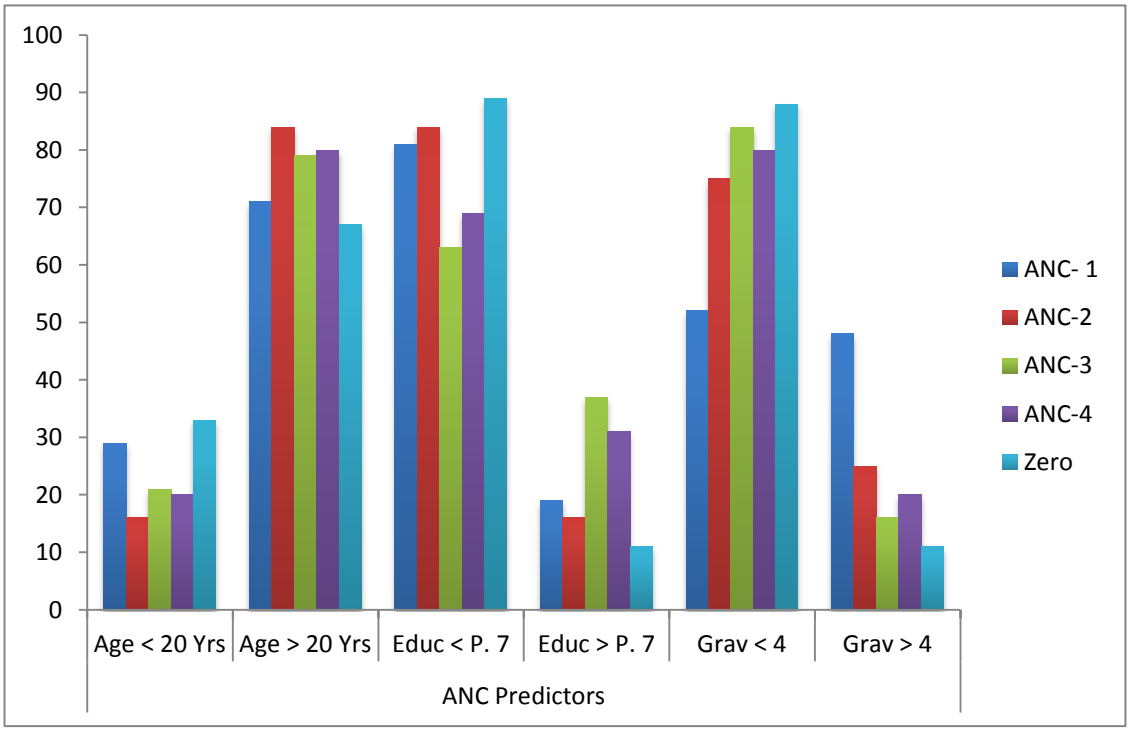
Regarding transport to health facilities, 54.2% (n=205) of mothers reported walking to health facilities for Antenatal Services followed by motorcycle Boda-boda users 40% (n=151). Similarly, 44% (n=166) of the women were less

than 1 km to the health facility taking less than 60 minutes to the facility, explaining probably why most women preferred to walk.

Majority of the mothers 75.9% (n=287) rated the attitude of health workers as good. 38.6% (n=146) reported that the waiting time depends on the number of clients one meets on the line and the time of arrival at the facility. Antenatal attendance was fair with 41.8% (n=158) having attended four times, much as 73.3% (n=277) said they were asked to pay some money, although mostly less than one thousand shillings.

Most next of kin were between 21 to 30 years 55% (n=208) and their main occupation was defined business. Most mothers reported having received support from their next of kin mostly in form of money for transport 61.6% (n=233) although they ended up footing and paying it to the health workers. Women were mainly from monogamous marriage with 73.3% (n=277). Regarding support during delivery, Traditional Birth Attendance (TBA), were found to be more active in supporting delivery as 48.9% (n=185) of women confirmed having been delivered by them.

Figure 1: Grouped Bar graph showing the association between Number of ANC attendance and the Three - ANC Predictors



Discussion

Three Hypothetical variable Age, Education and Gravidity were examined for any possible association with ANC attendance using cross tabulation with *chi square analysis.* Variation in attendance was not found to have any link

with the age grouping. Statistically, there was insignificant difference (p-value >0.05) in attendance among women aged less than 20 compared to those of 20 and above years. Using chi-square test, there was insufficient evidence to reject the direct hypothesis of non- association between age and number of antenatal care attendance.

Considering education level, there was significant (p-value < 0.05) statistical evidence to conclude that the number of antenatal care attendance depended on education level. However, the chi-square test could not detect whether the low or high education level triggers low or high rate of antenatal care attendance.

Low gravidity was significantly (p-value < 0.05) associated with the number of antenatal care attendance, since of the women who had attended antenatal for 4 times, 80.4% had low gravidity while 19.6% had high gravidity (>4)

Univariate and multivariate association between factors and antenatal care visits was investigated using an ordered logistic estimation technique using the maximum likelihood approach. The study estimated a standard ordinal logistic regression using $\ln(\vartheta_j) = \alpha_j - \beta_j x_i$ Where ϑ_j = probability (ANC attendance ≤ 4)/1-probability (ANC attendance ≤ 4) and α is the intercept, β is the coefficient for an individual predictor level

Considering three variables (age, education and gravidity), univariate analysis did not detect any predicting power on the number of antenatal attendance. Women aged less than 20 years had a 0.08 increased odds (8% increased possibilities) of attending antenatal compared to those aged 20 and above, assuming all other factors are not considered.

Women who had attended above primary education had increased chance of completing all the required four antenatal attendance compared to those who had attended only primary and below and this variation in odds ratio was found both at bivariate and multivariate levels (though insignificant, p-value >0.05). When gravidity was assessed both at bivariate and multivariate levels, the study found that women with lower gravity had higher affinity to complete all the four antenatal visits compared to those with high gravidity, assuming all other factors are not in play.

Conclusion

The research detected a dropout rate of 55.9% and an average health facility delivery of only 39% being highly associated with low education level (< P.7) – 68.5% (n= 269), high gravidity of mothers (p-value < 0.05). Many other factors in support of the hypothetical factors in influencing service utilization included availability of traditional birth attendants (TBAs), Low house hold income level (LHHIL), and husband's education level. The study therefore recommends the following: - improvement of girl child and mother's education, encouragement and promotion of full participation of traditional birth attendants in management pregnancy under supervision by trained health worker at the health facilities.

Acknowledgement

I greatly acknowledge the efforts of a number of organizations and individuals who contributed immensely to the success of the research. The organizations include Samia Bugwe North HSD, Health Facilities, Busia District Local Government, Uganda Christian University (UCU) and especially faculty staffs.

I further acknowledge the Principal Medical Officer - Busia Municipality, Dr Wanyama Odoobo for his entire support and supervision, the entire Staffs of the four Health Facilities for the co-operation and team work offered during the research period.

Finally, I highly appreciate all the hard work of field staff and, most important, the contributions of research respondents whose participation was crucial and of paramount importance to the successful completion of the research.

Special thanks to my wife Mrs. Wabwire Evarine Nampewo, My son Wabwire Arthur Arsene Praise and the entire family of my late father Wabwire. F.X Makada

References

[1] Mathai M. Alternative versus standard packages of antenatal care for low-risk pregnancy: RHL commentary (revised: 1 January 2011). *The WHO Reproductive Health Library*; Geneva: World Health Organization.

[2] Dairo M D & Owoyokun K E. Factors affecting the Utilization of Antenatal Care Services in Ibanda, Nigeria. Vol.12 No. 1 December, 2010.

[3] Nansubuga Resty. Factors Affecting the Utilization of Antenatal Care Services among Adolescents pregnant mothers. Case study of Naguru Teenage Health Centre, Kampala, Uganda Department of Population Studies, Institute of Statistics and Applied Economics, Makerere University, Kampala- Uganda; 2010: 6012 – 17.

[4] Abdel Aziem A Ali**,** Mohammed M Osman, Ameer O Abbaker **and** Ishag Adam: Use of Antenatal Care Services study in Kassala, Eastern Sudan. *BMC Pregnancy and Child birth 2010, 10:67 doi: 10.1186/1471-2393-10-67.*

[5] Simkhada, Bibha; Teijlingen, Edwin R. van; Porter, Maureen; Simkhada, Padam. Factors affecting the utilization of antenatal care in developing country; Systematic review of the literature. *Journal of Advanced Nursing February* 2008. *61(3), pp, 244 – 260.*

[6] Anna M van Eijk**,** Hanneke M Bles**,** Frank Odhiambo**,** John G Ayisi**,** Ilse E Blokland**,** Daniel H Rosen**,** Kubaje Adazu**,** Laurence Slutsker **and** Kim A Lindblade Use of Antenatal Services and Delivery Care among Women in rural Western Kenya: a community based survey: *Reproductive Health* 2006, 3:2 doi: 10.1186/1742-4755-3-2

[7] Uganda Bureau of Statistics (UBOS) and ICF International Inc. 2012. *Uganda Demographic and Health Survey 2011*. Kampala, Uganda

[8] Zeine Abosse, Mirkuzie Woldie, & Shimeles Olol. Factors influencing Antenatal Care Services Utilization in Hadiya Zone, in Ethiopia. *Ethiopian Journal for Health Science, 2010 July: 20(2): 75 – 82.*

[9] Yalem Tsegay Assfaw. *Determinants of Antenatal Care, Institutional Delivery and Skilled Birth Attendants Utilization in Samre Saharti District, Tigray, Ethiopia, Umea.* International School of Public Health, Department of Public Health and Clinical Medicine, Epidemiology and Global Health, Umea University, Sweden; 2010

[10] Solome K Bakeera, Sarah P Wamala, Sandro Galea, Andrew State, Stefan Peterson & George W Pariyo. Community perceptions and factors influencing Utilization of Health Services in Uganda. *International Journal for Equity in Health (IJEH) 2009; 8:25. Published online Jul 14, 2009. doi: 10.1186/1475-9276-8-25.*

[11] Bbaale Edward. Factors influencing the Utilization of Antenatal Care content in Uganda. *Australian Medical Journal (AMJ) 2011, 4, 9, p 516-526.*

[12] Emmanuel O Nwosu, Nathaniel E Urama. Determinants of Antenatal Care Services Utilization in Nigeria, Developing Country Studies. *ISSN: 2224-607X (Paper) ISSN 2225-0565 (Online) Vol. 2, No. 6, 2012,* Visiting Fellow, Centre for Global Development, Washington DC, USA.

[13] Agnes Anyait**,** David Mukanga**,** George Bwire Oundo and Fred Nuwaha. Predictors for Health Facility Deliveries in Busia district of Uganda: Cross sectional study. *BMC Pregnancy Childbirth* 2012 Nov 20:12:132.doi:10.1186/1471-2393-12-132

[14] Ndyomugenyi R and Katamanywa J. Intermittent Preventive Treatment of Malaria in Pregnancy (IPTp): do frequent antenatal care visits ensure access and compliance to IPTp in Uganda Rural Community? *Trans R SOC Trop Med Hyg. 2010 Aug: 104(8): 536-40. doi: 10.1016/j.trstmh.2010.02.003. Epub. 2010 Mar 15*

[15] Mpungu S Kiwuwa and Patrobas Mufubenga, (2008). Use of Antenatal Care, Maternity Services, Intermittent Presumptive Treatment and Insecticide treated bed nets by Pregnant Mothers in Luwero district, Uganda. *Malar J. 2008 Mar 1:7:44. Doi: 10.1186/1475-2875-7-44*