UTILIZATION OF ANTENATAL SERVICES AMONG ADOLESCENTS IN WESTERN UGANDA

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Introduction

Adolescence is a period between childhood and adulthood characterized by emotional, biological and psychological changes; putting adolescents at risk for early marriage, unwanted pregnancies, sexual abuse and exploitation. Despite their high proportions in developing countries, available literature shows that young people do not routinely seek appropriate sexual and reproductive health information and care due to various socio-economic, cultural and political constraints. In Uganda, young people aged 10-24, constitute about 33% (MISR, 2000) while 47.3% of the total population is below 15. Due to the, HIV/Aids epidemic and the common belief that most adolescents are either too young or are expected to be in schools, antenatal care (ANC) uptake amongst this group, has been accorded less attention contributing to relatively high maternal mortality rates 33% (MOH,2004). Each year, pregnancy and childbirth claims the lives of over 6,000 women and approximately 120,000 newborns in Uganda (Magnussen 2003).

Adolescent maternal mortality is of great concern, for all developing countries with broad-based population pyramids (MOH, 2004). Particularly in most rural areas like western Uganda, where health facilities do not provide a full range of Primary Health Care services, undermining access to RH services, including basic EmOC and comprehensive EmOC services. Almost all level II health centres in Uganda do not provide maternity services. As a result, maternal mortality has remained high, (527/100,000 in 1989, and 505/100,000 in 1995-2001), that the PEAP target of 354 for 2005 was not achieved. This if it persists, negative impacts will be dealt on the MDG target of 31/100,000 by 2015.

The study therefore, focuses on the socioeconomic and demographic factors responsible for the expected low antenatal uptake, despite the relatively high, antenatal care coverage (92%) provided freely in all Ugandan government hospitals.

Objectives of the study

The main aim of this study is to identify the factors affecting adolescents' utilization of antenatal services in western Uganda,. Specifically, the study aims at

- Identifying the number of antenatal visits by socioeconomic and demographic factors
- Evaluating ever utilization of antenatal by socioeconomic and demographic factors
- Determine the role of the media (radio, Newspaper) on ANC Utilization of by adolescents

Problem statement

There exists an information gap on adolescent utilization of antenatal services, in instances where studies focus on adolescents, antenatal care as a specific component of ASRH is often neglected or not fully explored. Majority of studies carried out; focus on antenatal care across all age groups irrespective of reproductive age, needs and constraints. This has led to formulation of health programs that do not address adolescent specific needs, more so, tools of analysis by most relevant studies, are limited to univariate and bivariate analysis falling short of examining the net effect of selected background and intermediate factors negatively impacting health care accessibility and utilization by adolescents. This study therefore aims at producing empirical data for effective intervention towards improvement in the utilization of ANC.

Justification of the study

The study l attempts to identify and explain the forecasted bottlenecks to adolescent utilization of antenatal services in western Uganda as a way of improving overall adolescent maternal health and providing a systematic body of knowledge that can be explored for appropriate policy formulation, act as an eye opener and reminder to both the state and civil society to always incorporate Reproductive Health needs of adolescents..

Data and methodology

Primary data collected from western uganda using Pre-coded questionnaires and interview guides was made use of and subsequent quantitative and qualitative research methods employed. Quantitively, analysis was done at 3 levels to include univariate, bivariate and multivariate analysis. This was done to give an overview of the, respondents' background characteristics, determine the significance of selected background characteristics on ever utilization and number of antenatal care visits in the last pregnancy and the net effect of selected background characteristics on the dependent variables respectively. Only models with good fit were presented in the findings

Theoretic frame work

Demographic aspects of adolescents such as age, religion, parity, residence, education level, tribe, district of origin act through proximate factors; household, community, societal beliefs, program factors (availability of health structures, accessibility, acceptability, occupation, income levels, quality of health care, attitudes of service providers) to impact on the times an adolescent either visits a health centre or utilizes an antenatal care facility at least once. These identifiable relationships were examined by the study for significance of association.

Expected findings

1. Antenatal utilization increases with higher levels of education and parity
2. There is a positive relationship between attitudes of service providers and uptake of ANC among adolescents
3. Gestation period at first ANC visit improves with income levels
4. The media plays a big role in creating awareness geared towards improvement in the level of ANC utilization.
5. The ability to pay for services, increases levels of ANC utilization

RESULTS

This chapter gives information about the findings of the study on ANC utilization by adolescents. The analysis was done by looking at, one variable at a time, establishing the relationship between two variables and interpreting the significant levels in relation to the dependent variable, (ever use of and number of times of ANC in the last pregnancy). The findings for the univariate analysis were developed by looking at selected background factors basing on the sex categories, (male, and female). This was done because the retrieved literature showed the consistence of the sex variable to utilization of ANC.

Characteristics of respondents

The results of the study show that majority of the respondents were from the rural areas estimated at 82.9% .In conformity with the AYA (2002) findings, out of the total 479 respondents, nearly one third (31.5%) were males with the females taking majority share. According to the AYA study, ANC utilization by males was measured based on whether a male adolescent accompanied his spouse for ANC.

Catholics dominated the survey population at 49.5%, this can be attributed to the majority numbers in Uganda, followed by Protestants 35.1% while the "other categories" comprising of Moslems, Seventh day Adventists, occupied the remaining 15.5%. Fewer respondents had never married (21.7%) while 78.3% were married or had ever been married. Majority of the respondents had primary level education (61.4%) while those with no education and secondary education comprised (18.8%) and (19.8) respectively. By district, Kisoro had the highest number of male and female respondents, 25% and 18.3% respectively, followed by Kyenjojo for both sex, (17.9%) being males and the least respondents from Kabale district with (3.3%) being females

Utilization of ANC

The study measured this utilization of ANC by asking adolescents whether they had ever utilized ANC in their last pregnancies. It was found out, that 85% had ever gone for ANC, in their last pregnancies. This can be attributed to the wide spread ANC coverage at 92%, the raising levels of awareness by adolescents for ANC (89.5%) and the relatively high level of client satisfaction (65%) with the program services.

Age and ANC utilization

Literature reviewed has shown a persistent relationship between, the age and utilization of ANC by adolescents. For purposes of this study, utilization was analyzed at three categories; health center, TBA and none utilization which were anticipated be outcomes of the age group of adolescents, for instance, it was hypothised that adolescent teenagers, (10-19) were more likely not to go for any ANC compared to the 20-24 adolescents. The

findings of the study show that, 20-24 adolescents have the highest percentage of ANC use from a health facility 86.7% while there was no utilization of TBAs by the 15-19s. The study also shows that the highest percentage of ANC non-use was among the younger adolescents (15-19) 17.9% compared to 11.6% among the 20-24s however, no significant relationship was found between the age groups and the different ANC levels of utilization(health facility, TBA and None) p=0.101

Number of ANC visits

The study attempted to analyze the percentage of adolescent making the recommended 4 ANC visits. To achieve this, the number of ANC visits was categorized in three options; none, 1-3 and 4+ visits in relation to the number of ANC visits as the dependent variable. Figure 4.1 shows the finding of the study.

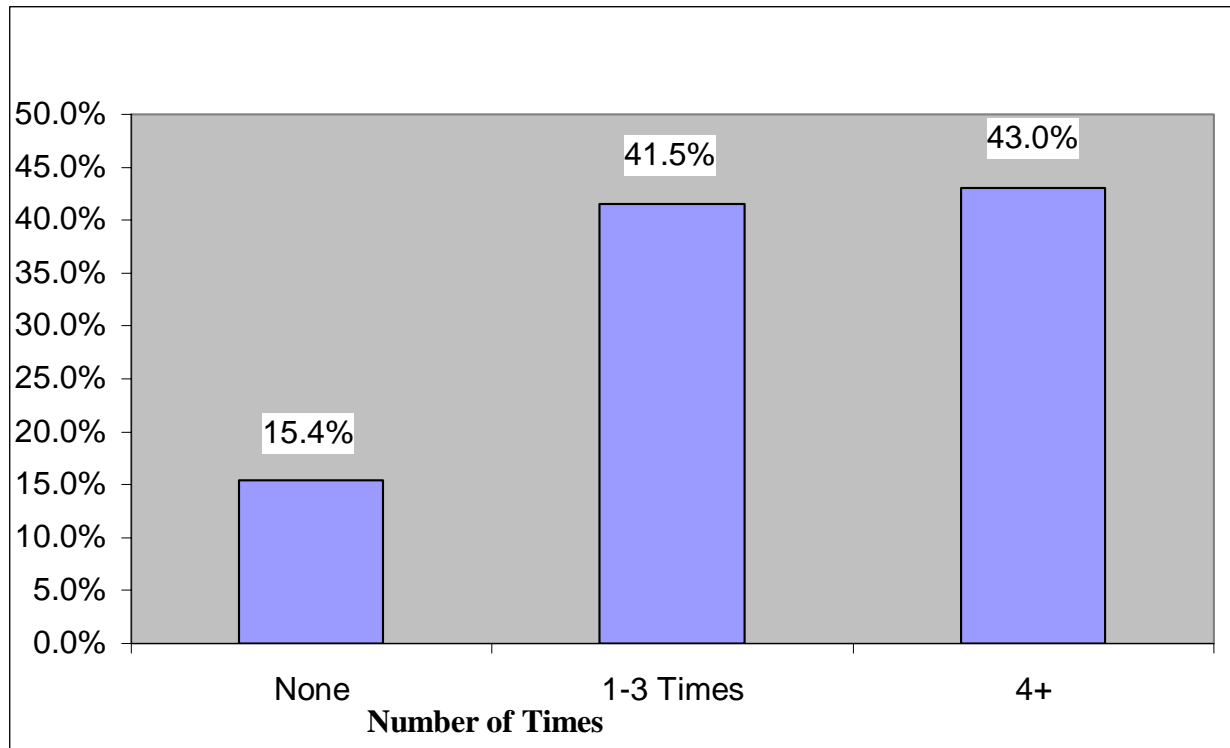**Figure 4.1 Average number of ANC visits**

Figure 4.1 shows 43% of adolescents in western Uganda make the WHO and UNICEF recommended 4 ANC visits, except for the small percentage variation (1%) and for the analysis that was based on older mothers, the findings agree with Ndyomugyenyi (1998) that estimated 42% of pregnant women in Uganda attend the required 4 ANC visits. It is also important to note, the period at which an adolescent attends the first ANC visit is crucial to effective utilization of IPT. The study examined this variable in relation to three-pregnancy trimesters/ Gestation periods (1-3, 4-6 and 7-9 months). The findings are presented in Figure 4.4

Figure 4.3 Gestation stage at first ANC Visit
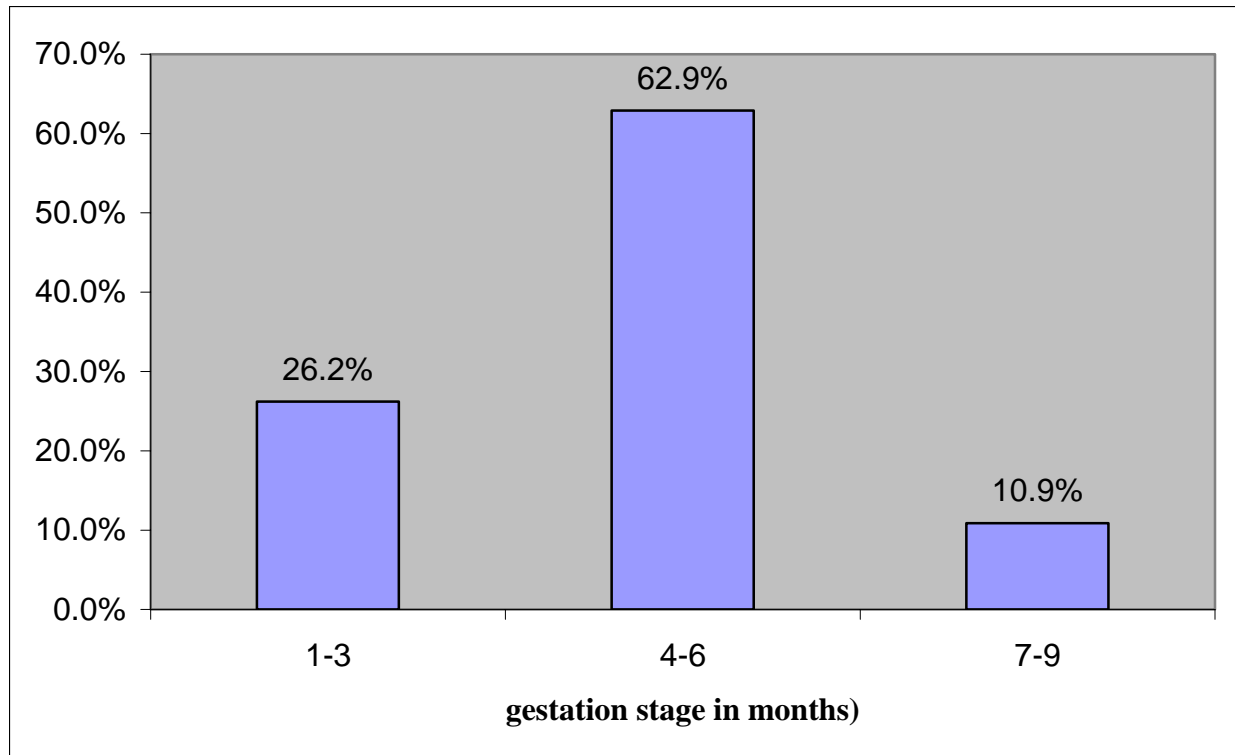
Despite the differences in the ages of women examined in similar studies by (WHO and UNICEF 2003), the findings of this study differ with reviewed literature that approximate 25% of women attend ANC for the first time in the third trimester. Figure 4.5, however, shows considerable improvement in the timing for ANC visits. Only 10.9% of adolescents attend ANC for the first time in their third trimester. This is assumed to be a result of the parity factor, where the concept of multigravidae as opposed to primigravidae reduces the novelty women attach to the period of pregnancy and consequently stimulating more late ANC attendances among older women of higher parity.

Bivariate Analysis

ANC utilization was measured at two levels, during their last pregnancy a respondent was asked as to whether he/she went for ANC and the number of times an adolescent accessed ANC. Both ways were examined with selected background characteristics. The chi-square test was used for the case of ever went for ANC or not, to determine whether background characteristics of respondents are associated to ANC utilization. The association between numbers of times of ANC with the selected background characteristics was tested using ANOVA to establish whether they were significantly different.

Table 4.2 Ever use of ANC by selected background characteristics

Variable	Percent ANC utilization	Number of cases(N)
Residence		
Urban	87.8	82
Rural	85.1	397
χ^2=0.392; df=1; p=0.531		
District		
Kabale	76.0	25
Kabarole	90.4	52
Kamwenge	76.3	80
Kasese	76.4	55
Kisoro	89.8	98
Kyenjojo	91.7	84
Masindi	92.6	54
Rukungiri	83.9	31
$\chi^2 = 18.435$; df = 7; p=0.010		
Sex		
Male	81.5	151
Female	88.1	328
Total	86.0	479
$\chi^2 = 38.04$; df = 1; p=0.005		

Age Group		
10-19	82.1	112
20-24	87.3	361
$\chi^2 = 1.863$; df = 1; p=0.172		
Education Level		
None	83.3	90
Primary	87.8	294
Secondary	83.2	95
$\chi^2 = 1.922$; df = 2; p=0.382		
Marital Status		
Never Married	77.9	104
Ever married	88.3	375
$\chi^2 = 7.294$; df = 1; p=0.007		

Source: AYA Survey data, 2002

From the study, district of origin, marital status and sex of respondents was found to be sinificant this is Contrary to findings from similar studies

Number of ANC Attendance by selected Background Characteristics

In the bivariate analysis with the number of ANC as the dependent variable, age, residence, education level, marital status, accessibility and occupation were run to determine the significance of each of those variables on ANC visits using stata. The results were presented in Table 4.3 and subsequently discussed.

Table 4.3 Number of ANC Attendance by selected background characteristics

Variable name	Average number of attendance (Mean)	Number of cases (N)
Age group		
10-19	3.5	92
20-24	4.0	304
p = 0.052; F= 3.787		
Residence		
Urban	4.4	71
Rural	3.8	334

Total	3.9	405
p=0.063; F=3.468		
Education Level		
None	3.43	72
Primary	3.85	254
Secondary	4.4	79
Total	3.9	405
P=0.046; F=3.109		
Marital Status		
Never Married	4.0	80
Ever Married	3.9	325
Total	3.9	405
p=0.601; F = 0.274		
Accessibility of ANC		
Yes	5.1	44
No	4.1	54
Total	4.5	98
p= 0.345 ; F= 1.077		
Occupation		
Public servant	5.17	6
Causal laborer	5.35	31
Peasant	3.48	219
Student	3.82	11
Other	4.40	10
None	3.77	26
p= 0.020; F=2.104		

Source: AYA Survey data, 2002

Age and ANC visits

 The study shows that age is significantly related at 90% significant rate to the average number of ANC attendance. From Table 4.3, p=0.057. Figures from the study show that the average number of ANC attendance was significantly lower within the   lower ages category of 15-19 (3.5) compared to 20-24 years (4.0) giving raise to the actual number of attendees from 91 to 304 respectively.The education level of an adolescent is also significantly related to average number of ANC visits. (p=0.046).

The occupation variable in this study was used to gauge the economic status of an adolescent and therefore a basis for defining the effect of income levels on use of ANC. This will further expound on the impact poverty has on ASRH. The findings of this analysis were presented in Table 4.3.

Results show public servants, casual laborers are more frequent at using ANC with an average of 5 visits, which is higher than the standard 4 times recommended by WHO. In comparison, the other category comprising of craftsmen, fishermen, student, peasants and the unemployed have the least times of ANC utilization averaging 3.7 times. The findings also show that there is a significant relationship between the highlighted categories of employment and the frequency of ANC attendance p= 0.020.

Access and Information utilization, marital status, awareness either by radio or peer influence, accessibility of ANC and residence were found not significant to the number of ANC visits.

Summary

Findings generated by the bivariate cross tabulation show a significant statistical relationship exists between sex, marital status, district of origin and utilization of ANC while ANOVA results show age, residence (rural/urban) and education level as significant to average number of times of ANC visits, leaving marital status as bearing no significance to the average number of ANC visits.

MULTIVARIATE ANALYSIS OF FACTORS AFFECTING UTILIZATION OF ANC SERVICES

The study attempted to examine the combined effect of the independent variables on the dependent variable, utilization and number of ANC in last pregnancy. Both logistic and ordered logit regression models were run.

Table 5.1 Logistic Regression Coefficients for Utilization of ANC by Socioeconomic and Demographic Factors

Went for ANC	Odds Ratio	β	p
Sex			
Female	1.000	0.000	0.000
Male	0.507	0.679	0.025
Age			
10-19 Years	1.000	0.000	0.000
20-24 Years	0.594	-0.521	0.113
Education level			
None	1.000	0.000	0.000
Primary	0.649	-0.432	0.332
Secondary	1.012	0.012	0.974
Tertiary	2.552	0.937	0.006
District			
Kabale	1.000	0.000	0.000
Kabarole	2.138	0.759	0.254
Kamwenge	0.772	-0.259	0.656
Kasese	1.018	0.018	0.976
Kisoro	1.762	0.566	0.343
Kyenjojo	5.717	1.743	0.017
Masindi	3.392	1.221	0.095
Rukungiri	1.868	0.629	0.441

Source: AYA Survey Data, 2002

Note: chi-square = 35.3, p=0.001

Sex

As reported in bivariate analysis, the findings of the regression model confirm the significance of sex to utilization of ANC. It was also found out that males were 0.5 times

less likely to utilize ANC compared to females this could be attributed to the biological differences between the two genders that make it more compelling for females to seek ANC services because the burden of pregnancy targets them.

Age

As anticipated from the findings of similar studies AYA 2002 on ASRH, ANC utilization in this study improves with age. The age group 10-19 was taken as the reference category (least likely group) and the probability of adolescents utilizing ANC, was analyzed in relation to the reference category. The findings are consistent and confirm the earlier stated hypothesis; younger adolescents 10-19 are 0.5 times less likely to seek ANC compared to the 20-24.

Education

By education status, ANC utilization improves by higher levels. The study found that respondents who had attended secondary school were 2.1 times more likely to use ANC as compared to those without any education. In relation to the reference category (none), A significant relationship exists between tertiary adolescents and their utilization of ANC, p=0.006. Tertiary adolescents were 2.6 times likely to utilize ANC compared to the reference category.

District

In comparison to Kabale district, Kyenjojo district scored highly at ANC utilization with adolescents hailing from the region 5.7 times more likely to seek ANC. A significant relationship exists between ANC utilization of adolescents from Kyenjojo in relation with

the reference category, p=0.017 followed by Masindi district at 3.4 times with the least

utilization being among adolescents from Kamwege district.

Ordered Logit Regression Model

To measure the number of ANC visits in relation to the independent variables, a logit

regression model was sought for the likelihood chances of going for more ANC visits by

adolescents given the district of origin, age, education level, occupation and affordability.

These were entered into the model, and the findings presented in Table 5.

Table 5.2 Ordered logit Regression Coefficients for average number of ANC visits by Socioeconomic and Demographic Factors

Average number of visits	β	Odds Ratio (OR)	p>|z|
District			
Kabarole	0.428	1.620	0.166
Kamwenge	-0.218	0.804	0.477
Kisoro	0.307	1.359	0.295
Kyenjojo	0.749	2.115	0.016
Masindi	0.949	2.585	0.007
Rukungiri	0.075	1.078	0.845
Sex			
Female	0.504	1.656	0.007
Age	0.053	1.054	0.022
Education level			
Primary	0.278	1.321	0.221
Secondary	0.777	2.175	0.011

Occupation			
Peasant farmers	-0.712	0.487	0.000
Businesspersons	-0.262	0.767	0.224
Causal laborer	0.609	1.838	0.001
Housewife	-0.347	0.707	0.196
Fishmonger	-0.417	0.659	0.233
Driver	-0.293	0.746	0.605
Student	0.854	2.348	0.057
Affordability			
No	0.263	1.301	0.054
Marital Status			
Never married	0.448	1.565	0.005

Prob > Chi-square   = 0.000   Number of obs = 473 LR Chi-square = 39.45

Occupation

Occupation as an independent variable in the model, was categorized to include**;** peasant farmers, businesspersons, casual laborers, housewives, fishmongers, drivers and students. Taking the none category as the reference, specific categories of the occupation variable were found to be significant to utilization of ANC; peasant farmers p=0.000, casual laborers (0.001) with an odds ratio of ANC visits at 1.8.

Age

Taking age as a continuous variable a significant relationship exists between number of ANC visits and the age of the adolescents (p= 0.022) with more ANC visits as age

Sex

Females were 1.6 times likely to go for more ANC visits compared to the males. As hypothesized, there exists a significant relationship between sex and the number of ANC visits, p=0.007 in regard to the reference category. Again this finding is consistent and

confirms the cultural perception that ANC is women's business and that the males have a limited role to play since the burden of carrying the pregnancy naturally befalls women. The findings are also in line with the results of the regression model that proved the significance of sex to ANC utilization.

District

The study categorized Kabale as the reference district. The model shows a significant relationship exists between a few of the half districts of study with number of ANC visits. Adolescents from Kyenjojo were 2.3 more likely to go ANC with a significant rate (p=0.016), Masindi p= 0.007, OR = 2.3 The Ordered logit model therefore shows consistence with the findings of the logistic regression model in relation to the significance of Kyenjojo district to the use and frequency of ANC visits.

Affordability

The ability to afford ANC services, was found to be significant to number of ANC visits p=0.054, with the odds ratio (OR) estimated at 1.3 times. This confirms reviewed literature that showed lack of transport to ANC centers, high fees for necessary but costly laboratory fees, drugs and consultation fees in case of private centers not serviced by government hospitals impacts on the utilization of maternal services. Significance of the affordable variable is also explained by the unwillingness by mothers to pay for ANC services that was highlighted by (NSDS 2004). This finding is however in contrast to the logistic regression results that showed affordability as not being significant to utilization of ANC.

Marital status

Increase in the number of ANC visits was associated to the Marital status explaining the significant relationship between the two, (p=0.005) with the married 1.5 times more likely to go for ANC compared to unmarried, this confirms the positive relationship between support by spouses to increase in levels of healthy uptake evident in most literature reviewed.

Education level

In comparison to the illiterate without any formal education, secondary level adolescents were 2.2 times more likely to utilize ANC services, establishing a significant relationship between the two variables, (p=0.011). This can be explained by the free ANCC that avails all adolescents an opportunity to utilize the services controlling for other significant independent variables. The wide spread awareness concerning ASRH in schools and centers of learning estimated by the study at 87% also contribute to the role of education and marital status to making more ANC since education equips individuals not only by the capacity to purchase services, but also the knowledge consequently influencing the attitudes and practices positively in line with utilization of healthy services. This is in contrast to the results of a logistic regression model that showed the significance of tertiary adolescents to the utilization of ANC.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The socio-economic and demographic factors for this study were grouped into 5 categories; societal, communal, household, program and individual adolescent factors. These selected categories constitute age, sex, religion, marital status, Access and Information Utilization, accessibility, residence, district and quality of ANC services.

Findings generated by the descriptive analysis of the total 479 respondents, revealed that majority were rural dwellers (82.9%) with males being fewer than females (31.5%). By religion, Catholics dominated the study (49.5%) while primary pupils were the majority respondents (61.4%). Rate of ANC use was estimated at 85% although only 43% of adolescents made the recommended 4 ANC visits. 65% were satisfied with the ANC services. Results of a cross tabulation show a significant relationship exists between Ever usage of ANC by sex (*p=0.005*), District (*p=0.018*) and marital status (*p=0.007*) while residence, age-group, education level, awareness, peer influence, listening to radio were not found significant. Both models show the significance of sex with females accessing more than the males and kyenjojo distict. Although affordability was significant to number of times, it was not found to be associated to ever utilization.

Conclusion

Despite the free ANC health services provided by government (92% coverage), access and subsequent utilization of the government health facilities is still limited (85%). According to the study, the reasons for limited access are both systemic and structural. People do not utilize government health services because of lack of drugs, demand for payment and the long distances to the facilities.

The percentage of adolescents in western Uganda making the recommended 4 ANC visits is still low (43%) . The Ordered logit analysis shows the significance of the affordability variable despite the free ANC services in government centers, this therefore explains the limitation to more ANC visits arising from other related costs such as transport other than

the availability of health service undercutting ANC visits. This is true even where awareness, peer influence and listening to radio are effective.

Interestingly the study found out, fewer adolescents 10.9% go late for their first ANC visit (in the third trimester) compared to available literature (NSDS 2004), that shows 25% of older women go for the first visit in the third trimester. A possible explanation for this trend could be that young women do not on the whole have experience on pregnancy related issues and therefore, tend to panic and seek medical attention in the first months of pregnancy especially when faced with pregnancy related sickness compared to older women, often of higher parity and experience.

Recommendations

It is crucial that training for service providers focusing on changing attitudes towards youth and ASRH by improving confidentiality, and offering relevant information and resources be conducted. This not only addresses the problem of un-friendly service providers but also improves accessibility of ANC by stimulating demand of the improved quality services.

The study recommends general sensitization of the masses especially spouses on the need to go for at least 4 visits this is crucial, since support by spouses according to this study, is influential to ANC utilization

In order to improve acceptability and accessibility of ANC identified by the study as a major impediment to ANC utilization, It is important that although young people be

involved in health service design and that their voices and concerns are addressed in implementation of ANCC

As anticipated basing on available literature, the study found out that utilization of ASRH improves with age. There fore it is important that teenage pregnancies be vigilantly discouraged by boosting girl education as a way of solving early unplanned pregnancies and improving overall ANC utilization since higher levels of education attainment significantly impacts on utilization of ANC

Areas for further research

The confirmed significance of Kyenjojo district to ANC use by both models, despite the proven least improvement in ANC services (NSDS, 2004), is an area of great interest where future research could be based. It is also important that comparable studies be carried out to examine the ANC seeking behaviors of males in different regions of the country that were not provided for by this study.

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