

Full-Length Research Paper

Association between health system factors and utilization of modern contraceptives in Namutumba District, Uganda

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ABSTRACT: Namutumba District is located in rural East-Central Uganda, where the vast majority of women have unmet needs for family planning and/or child spacing, resulting in unplanned pregnancy, which is a primary cause of maternal morbidity and mortality. This study seeks to document the influence of social-cultural characteristics on the utilization of modern contraceptives in Namutumba District. A cross-sectional study on modern contraceptive utilization was conducted on 308 women of child bearing age in the community and 8 service providers in 4 health facilities. Data was collected using Semi-structured and in-depth interviews by the research assistants through standardized pre-coded questionnaires at the residence or workplace of the study participant. Religion and husband/partners support were 2 times more likely to influence modern contraceptive utilization compared to other social cultural characteristics Odds Ratio [(OR=2.012, 95%CI 0.731-5.539) and (OR= 1.794, 95% CI 0.659-4.888)]. Similarly, decision maker for contraceptives and access to information [(OR= 0.17, 95% Confidence Interval (CI 0.485-2.824) (OR= 0.12, 95% CI 0.009-0.687)] respectively, did not have significant association with utilization of modern contraceptives. Finally, socio-cultural factors such as husband/partner support and religion were important in determining the usage of modern contraceptive techniques. The main recommendation is that the District Health Department improve modern contraceptive utilization among women of reproductive age by strengthening IEC at all levels through support supervisions, mentorships, and continuous medical education to improve access to Family planning information, given that community members access health information from government health centres.

Keywords: Association, health system, factors, utilization, contraceptives

INTRODUCTION

Family Planning/Birth control and abortion are well documented in Mesopotamia and Ancient Egypt. The Ebers Papyrus from 1550 BCE and the Kahun Papyrus from 1850 BCE have within them some of the earliest documented descriptions of birth control, the use of honey, acacia leaves and lint to be placed in the vagina to block sperm (Cuomo, 2010; Lipsey et al., 2005). Another early document explicitly referring to birth control methods is the Kahun Gynecological Papyrus from about 1850 BCE. It describes various contraceptive pessaries, including acacia gum, which recent research has confirmed to have spermicidal qualities and is still used in contraceptive jellies. Other birth control methods

mentioned in the papyrus include the application of gummy substances to cover the cervix, a mixture of honey and sodium carbonate applied to the inside of the vagina, and a pessary made from crocodile dung. Lactation of up to three years was also used for birth control purposes in ancient Egypt (Lipsey et al., 2005).

Plants with contraceptive properties were used in Ancient Greece from the 7th century BCE onwards and documented by numerous ancient writers on gynecology, such as Hippocrates. The botanist Theophrastus documented the use of Silphium, a plant well known for its contraceptive properties (Encyclopedia of birth control 2001). Asafoetida, a close relative of silphion, was also

used for its contraceptive properties. Other plants commonly used for birth control in ancient Greece include Queen Anne's lace (*Daucus carota*), willow, date palm, pomegranate, pennyroyal, artemisia, myrrh, and rue. Some of these plants are toxic and ancient Greek documents specify safe dosages.

Recent studies have confirmed the birth control properties of many of these plants, confirming for example that Queen Anne's lace has post coital anti-fertility properties. Queen Anne's lace is still used today for birth control in India. Like their neighboring ancient Greeks, Ancient Romans practiced contraception and abortion (Lipsev et al., 2005).

In medieval Western Europe, any efforts to halt or prevent pregnancy were deemed immoral by the Catholic Church (Cuomo, 2010). Women of the time still used a number of birth control measures such as coitus interruptus, introducing lily root and rue into the vagina, and infanticide after birth (McTavish, 2007).

Knowledge of herbal contraceptives to regulate fertility decreased in the Early Modern period (Riddle, 1999) attributed this to attempts of European states to repopulate Europe after intense losses following the plague epidemics that started in 1348 (Riddle, 1999; Heinsohn and Steiger, 1999; Heinsohn and Steiger, 2004).

Barrier methods such as the condom have been around much longer, but were seen primarily as a means of preventing sexually transmitted diseases, not pregnancy. Casanova in the 18th century was one of the first reported using "assurance caps" to prevent impregnating his mistresses (Fryer, 1965; Dingwall, 1953). In 1909, Richard Richter developed the first intrauterine device made from silkworm gut which was further developed and marketed in Germany by Ernst Gräfenberg in the late 1920s (Fritz and Speroff, 2011).

The Bible Book of Genesis references withdrawal, or coitus interruptus, as a method of contraception when Onan "spills his seed" (ejaculates) on the ground so as not to father a child with his deceased brother's wife Tamar (Cuomo, 2010).

When human reproduction is left unchecked, it results into high birth rates, bringing about large family size with the negative effects on the health of the respective mothers and children. Consequently, this leads to negative impact on the family, the community and the nation at large as a result of economic overload in covering the additional demand. Indeed, uncontrolled births can destroy a nation's development aspirations and prevent its people from enjoying an improved standard of living.

A high fertility rate of 6.4 children per woman indicates a big gap in the uptake of modern contraceptives nationally and is a major factor underlying the high population growth rate which is an outcome of low contraceptive prevalence and high unmet need for family

planning services (UDHS, 2011).

The government of Uganda, through the Ministry of Health (MoH) has been extensively expanding family planning services, especially use of modern contraceptives to the rural areas for the last thirty years (Kassede and Temmam, 2000). The government has partnered with non-governmental organizations like Reproductive Health Uganda (formally Family Planning Association of Uganda) and other private health services providers to increase access to modern contraceptives. (Kassede and Temmam, 2000)

Despite all the effort above, use of modern contraceptives has remained low in the region. On average, only 27% of women in East-Central region use modern contraceptives compared to 40% in urban areas. The prevalence in Namutumba which is a typical rural area in the East-central region could be worse. This implies poor health, low population development and low women empowerment, all of which, contraceptive prevalence is an indicator (UDHS 2011).

Aim

This study seeks to establish the association between health system factors and utilization of modern contraceptives in Namutumba District

Literature review

Health system characteristics as predictors of modern contraceptive utilization

It has been argued that enhanced living standards and life expectancy, education, and women's emancipation are the most effective ways to reduce fertility and curb populations growth, of course through embracing the use of modern contraceptive methods. However, it has been noted that having family planning programs and services available speeds up fertility decline and slows population growth (Bernstein et al., 2006). There are reports that men and women need the same things to achieve SRH. Both need the skills, knowledge and mind-set along with appropriate health care services and supplies to prevent unintended pregnancies and achieve healthy intended births (Sonfield, 2004).

Supply and demand influence on modern contraceptive utilization

Though factors may vary from region to region worldwide, Studies have indicated that supply and demand factors have profound influence in utilization of family planning services which includes use of contraceptive methods

and by far the main factor limiting modern contraceptive use in rural areas in both developed and developing countries (Cleland, 2009). Access to family planning services is reportedly limited by long distance to a nearest provider, lack of contraceptives and qualified health workers in family planning clinics and low quality of family planning services (Cleland, 2009).

The number of couple years of protection (CYP) provided in 2013 increased by 2% to 12.1 million (Lemani, 2018). In the Africa and South Asia regions, where there is the greatest unmet need for contraception, there were 10% and 21% increases, respectively. In Africa, this growth was mainly due to injectable, intrauterine devices and oral contraceptive pills, whereas in South Asia, it was due to intrauterine devices and implants (RHU 2013 report). Supply-side family planning programs is to ensure that contraceptive methods are as readily accessible to clients as possible. This includes ensuring that a wide range of affordable contraceptive methods are offered, making services widely accessible through multiple service-delivery channels, ensuring that potential clients know about services, following evidence-based technical guidelines that promote access and quality, and providing client-centred services. These types of supply-side interventions ensure that women and couples are able to use contraceptive methods and family planning services effectively (Mwaikambo et al., 2011).

A different study in Lesotho, S. Africa (Tuonane et al., 2004) found that the type of facilities to which women had access (e.g. hospital, clinic, community-based and employment – based) was a significant predictor of current use of contraception. Accessibility, reliability and responsiveness to women needs of contraceptives were also a predictor in the use of contraceptive methods by Iranian women (Mackenzie, 2018). A study in Ethiopia showed that, problem of availability and accessibility influenced the use of contraceptive methods (Gizaw, 2011). A similar study in Bangladesh also indicated that the main reasons for women not visiting MCH clinics were non availability of commodities, behaviour of service providers and long waiting times (Zainab et al., 2001). This was also evident in Iranian studies where women using contraceptive methods were dissatisfied with monthly provision of contraceptives and these led to seeking services from private outlets (Mackenzie, 2018). Distance from the nearest health facility and availability of an all-weather road have a greater effect on contraceptive knowledge than they do on use. By contrast, health or family-welfare visits to the village in the previous month have a greater effect on use (Das, 2001).

Fear of side effects on modern contraceptive use

Women's decision about the use, non-use or

discontinuation of contraceptive methods can be affected by their perceptions of contraceptive risks and benefits, concerns about how side effects may influence their daily lives and assessment of how particular methods may affect relationships with partners or other family members (Moronkola et al., 2006).

Fear of known and unknown side effects of modern contraceptives is not a major problem in rural areas in developed countries due to strong health information and communication networks (Spennell et al., 2000). However, in developing countries fear of side effects of modern contraceptives has been cited in many studies as one of the major barriers to modern contraceptive use especially in rural areas.

A study in Kenya revealed that, the use of the contraceptive methods varied in terms of demographic and socioeconomic factors of the woman and also the woman's perception in terms of the facility/provider factors such as quality, friendliness of staff and promotion. Various factors accounted for the low use of family planning services including use of contraceptive methods. This included partner's approval, quality of the services, friendliness of the staff administering the services and the woman's knowledge (Kessy, 2006) about contraceptive methods. Other factors included the woman's income level, proximity to the provider and the religious background of the woman (Okech, 2011). However, some scholars have presented evidence that a positive attitude may not necessarily lead to increased utilization of family planning services among men and their spouses. Overall, the rate of contraceptive use is associated with wealth, education, ethnicity, place of residence, and strength of national family planning programs within countries (Mackenzie, 2018).

In Uganda, it was discovered that family planning clients are not given adequate information about their contraceptive methods of choice. When such clients encounter problems while using the contraceptives, they may stop using and or even discourage others from using them (Akol, et al., 2009). Considering this, it is not surprising that fear of side effects of modern contraceptives coupled with the information gap between service providers and clients was reported in the UDHS 2006 as one of the major factors contributing to low utilization of modern contraceptives in rural area in Uganda (UBOS, 2007).

There is a likelihood of failure to achieve the reduction of child mortality, improvement of maternal health, achievement of universal primary education, environmental sustainability and combating HIV/AIDS, malaria and other diseases as part of the Millennium Development Goals (MDGs) due to the large number of people (ever increasing population) in need of health and education, among other public goods which requires large amounts of resources, personnel and infrastructure.

To address this, many countries in Sub Saharan Africa

(SSA) including Uganda focused their attention on birth control measures, especially the use of modern contraceptive methods.

In 2013, the Ugandan government increased the annual budget allocation for contraceptive supplies in line with its 2012 commitment, from US\$3.3 million to US\$5.0 million. The government also promised to strengthen institutional capacity of public and community-based services to increase choice and quality of contraceptive services. In 2013, the government approved a task shifting policy whereby clinical staff other than doctors can provide sterilization. Previously, only fully qualified doctors were allowed to carry out such procedures. These changes followed targeted advocacy by Reproductive Health Uganda (RHU) and civil society partners. RHU met with and advised members of parliament and key staff from the Ministry of Health and the Ministry of Financial Planning and Economic Development. RHU also worked with the media to publicize the issue of contraceptive security (RHU 2013 Annual Report).

METHODOLOGY

Study area

The study was carried out in Namutumba District found in the East-central Region of Uganda. The Basoga are the main inhabitants of this District and the dominant local language is Lusoga. There are 324 villages which make up the six sub-counties of the district. There is a total population of 230,105 and 3684 households (UBOS, 2012 projections). The Main economic activity is subsistence agriculture carried out by 85% of the rural population, while petty trading and formal employment occupies the remaining minor section.

Study design

This was a cross-sectional study using both quantitative and qualitative research methods. The design was suitable for this study as it was intended to establish the extent of utilization of modern contraceptives and factors associated with it at a point in time without follow up in Namutumba District.

Study population and sample size

The study target population was women of child bearing age, currently residing or working in Namutumba District. The sample included: Women of reproductive age (15-49 years) willing to participate in the study and able to give informed consent; in the communities of Namutumba District during the study. Health care workers providing reproductive health services, including family planning

participated in the Key informant interviews. The sample size was determined using Fisher Exact formula. According to UDHS 2011, the prevalence of modern contraceptive utilization among women of reproductive age in Uganda was found to be 24%. The district target population (N), was 55,317 which is 24.04% of the total population 230,105 (women of reproductive age). The sample size was determined using the formula recommended by fisher et al. (1998) [$n = z^2pq/ d^2$]

Where:

z = (Z score corresponding to 95% confidence interval).

p = the estimated prevalence of use of contraceptive methods (this was set at 0.24 according to UDHS, 2011.)

$q = 1-p = (1 - 0.24) = 0.76$

$d = 0.05$ (Sampling error /the margin of error (5%) that can be accepted in this study).

$$n = \frac{1.96^2 \times 0.24 \times 0.76}{0.05^2}$$

$N = 52,624$ (Target population),
= 280

10% of the calculated figure was added to the calculated sample size for nonresponse i.e. $(10/100 \times 280) = 28$

So, $280 + 28 = 308$.

The sample size for in-depth interview was 8 healthcare workers

Sampling technique

A multistage random sampling technique was used to select the study sample. It was done in three stages as follows;

Stage 1

The District was first divided into six strata, which are the six sub counties that make up Namutumba District. These are; Ivukula, Kibaale, Nsinze, Magada, Bulange and Namutumba. Cluster sampling was used to obtain three sub counties out of the six in Namutumba district. Each name of the six sub counties was written on a piece of paper and three names were picked randomly.

Stage 2

Nine villages were randomly selected from three sub counties. Each name of the villages in semi urban and rural areas were written on pieces of papers.

Three villages from urban, three from semi urban and three from rural area were randomly picked. Pieces of papers written “Yes” and “No” were used for picking eligible respondents. Whoever picked yes was then interviewed.

Stage 3

To get the sample for in-depth interviews, two staff were picked randomly from each facility out of 3 to 4 who were on duty on the day of interview. Three health facilities were randomly selected out of the six Health facilities in the district. All health facilities in the district were listed on pieces of papers and three facilities picked randomly. The only Health Centre IV in the district was purposively picked, giving a total of 8 health workers.

Research instruments

Primary data was collected using pre-coded questionnaires. Data was collected by the research assistants through standardized pre-coded questionnaire guided interview at the residence or workplace of the study participant. It would have been ideal to have the questionnaire self-administered in order to limit responses that reflect desired responses rather than true responses but because of the high levels of illiteracy, the respondents were interviewed by research assistants and the responses filled in the questionnaire. Respondents were interviewed after signing or thumb printing a consent form. Secondary data was used in this study mainly for reviewing literature.

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Data analysis and presentation (management)

The completed surveys were manually reviewed for completeness, and un-coded data was coded before

being entered and analyzed by STATA. The data was analyzed and presented using the following methods: Univariate analysis in the form of frequency tables, bar graphs, pie charts, and proportions, as well as bivariate analysis involving cross tabulations and the calculation of chi-square and p-values. It was examined using STATA and Excel spreadsheet software.

RESULTS AND DISCUSSION

Health system characteristics influencing modern contraceptive use

A great proportion of respondents 262(85.06%) had information on contraceptive methods and a very small proportion 46(14.94%) claimed they had no information on contraceptive methods. Majority respondents 149(61.07%) agreed on ever using contraceptives, 93(38.11%) of respondents claimed they had never used contraceptives and only 2(0.82%) confessed on not knowing the use of contraceptives hence never knowing they had ever used contraceptives (Table 1).

Most respondents 118(73.75%) and 115(73.72%) had considerably used contraceptives in both the last 12 and 3 months respectively while only very small proportions 42 (26.25%) and 41(26.28%) had never used respectively.

An average proportion 81(50.31%) respondents disagreed on ever missing contraceptives after visiting clinics, while 65(40.37%) agree on ever missing contraceptives after visiting the clinic and only 15(9.32%) of respondents never remember ever missing on contraceptives after visiting clinic. Majority of respondents 156(85.25%) walked between one to two hours to access contraceptives while low proportions 17(9.29%) and 10(5.46%) moved for about 3-4 and 5 and above hours to access contraceptives respectively.

A very high proportion of 164(91.11%) of respondents used less than 5000ugx as transport fares to access contraceptive points and only 4(2.22%) used more than 10,000ugx to access contraceptive units e.g. clinics.

When the respondents were asked if they were made to pay for contraceptive services, more than average 103(59.20%) agreed that they were made to pay for contraceptive services and a proportion of 71(40.80%) disagreed to this. In addition to this, a very high proportion 141(81.03%) agreed to being offered other services along with contraceptives and only 33(18.97%) were not given any other services along modern contraceptives.

Table 2 shows a bivariate relationship between health factors and contraceptive use and the variation in contraceptive use caused by the health variables. The significant level was set at $p < 0.05$. A high proportion 70(95.89%) of respondents who had information about

Table 1: Health system factors.

Characteristics	Variable	Frequency	Percentage
Knowledge/ information on contraceptive method	Yes	262	85.06
	No	46	14.94
	Total	308	100
Ever used contraceptives	Yes	149	61.07
	No	93	38.11
	I don't know	2	0.82
	Total	244	100
Used FP in the last 12 months	Yes	118	73.75
	No	42	26.25
	Total	160	100
Used FP in the last 3 months	Yes	115	73.72
	No	41	26.28
	Total	156	100
Ever missed on contraceptives after visiting clinic	Yes	65	40.37
	No	81	50.31
	Don't remember	15	9.32
	Total	161	100
Reasons why missed	Stock out of contraceptives	41	54.67
	Sent away by health workers	4	5.33
	Got tired and left	24	32
	No privacy	6	8
	Total	75	100
Walking hours	One to two hours walk	156	85.25
	Three to four hours walk	17	9.29
	Five and above	10	5.46
	Total	183	100
Cost of transport	Less than 5000ugx	164	91.11
	5000-10,000ugx	12	6.67
	more than 10,000ugx	4	2.22
	Total	180	100
Pay for service	Yes	103	59.2
	No	71	40.8
	Total	174	100
Other services along with FP	Yes	141	81.03
	No	33	18.97
	Total	174	100
Other services received along with FP	General health education	89	57.42
	Counselling	66	42.58
	Total	155	100
Currently using contraceptive methods	Yes	73	55.73
	No	58	44.27
	Total	131	100

Source; primary data

contraceptive methods were actually using them and was balanced by a considerable high percentage of 56(96.55%) with a low frequency of respondents who had information about contraceptive methods but were not using them. A prediction revealed that respondents who

had no knowledge/ information about contraceptive methods were at 88% probability of not using contraceptives compared to their counterparts with knowledge about contraceptives. [OR=0.120 95% CI 0.009-0.687].

Table 2: Bivariate analysis of health system factors by use.

Characteristics	Variable	Currently utilization		COR	P-value	95% CI
		Yes [n(%)]	No [n(%)]			
Information about contraceptive methods	Yes	70(95.89)	56(96.55)	1	0.200	0.009-0.687
	No	3(4.11)	2(3.45)	0.12		
Ever use of contraceptives	Yes	64(94.12)	44(89.80)	1	0.242	0.094-1.816
	No	3(4.41)	5(10.20)	0.413		
	I don't know	1(1.47)	0(0.00)	1		
Used FP in the last 12 months	Yes	61(93.85)	27(61.36)	1	0.000	0.032-0.339
	No	4(6.15)	17(38.64)	0.104		
Used FP in the last 3 months	Yes	63(98.44)	22(50.00)	1	0.000	0.002-0.125
	No	1(1.56)	22(50.00)	0.016		
Ever missed on contraceptives after visiting clinic	Yes	32(48.48)	13(25.49)	1	0.025	0.174-0.890
	No	30(45.45)	31(60.78)	0.393		
	Don't remember	4(6.06)	7(13.73)	0.232		
Reasons why missed	Stock out of contraceptives	21(56.76)	8(42.11)	1	0.365	0.170-1.916
	Sent away by health workers	0(0.00)	2(10.53)	1		
	Got tired and left	12(32.43)	8(42.11)	0.571		
	No privacy	4(10.81)	1(5.26)	1.524		
Solution If missed FP from clinic	Purchase from the pharmacy	13(36.11)	5(27.78)	1	0.766	0.137-4.328
	Use of alternative method	9(25.00)	3(16.67)	1.154		
	Do not use any method	8(22.22)	7(38.89)	0.44		
	Ask my VHT	6(16.67)	3(16.67)	0.769		
Walking hours	One to two hours walk	66(90.41)	54(96.43)	1	0.108	0.683-47.998
	Three to four hours walk	7(9.59)	1(1.79)	5.727		
	Five and above	0(0.00)	1(1.79)	1		
Cost of transport	Less than 5000ugx	70(95.89)	54(96.43)	1	0.473	0.234-22.873
	5000-10,000ugx	3(4.11)	1(1.79)	2.314		
	more than 10,000ugx	0(0.00)	1(1.79)	1		
Pay for service	Yes	48(66.67)	30(53.57)	1	0.133	0.281-1.183
	No	24(33.33)	26(46.43)	0.577		
Other services along with FP	Yes	65(90.28)	45(80.36)	1	0.116	0.159-1.223
	No	7(9.72)	11(19.64)	0.441		

Source: Primary data

The study also revealed statistically significant associations ($p=0.000,0.000,0.025,0.039 <0.05$) of contraceptive use with respondents who had been using contraceptives in the last 12 months, last 3 months, those who had not missed contraceptives on visiting a clinic and those who did not remember missing contraceptives on visiting a clinic respectively. It further showed that respondents who had not used contraceptives in the last 12 months were less likely to be using contraceptives [OR=0.104,95% CI 0.032-0.339], while respondents who had not been using contraceptives in last 3 months were also less likely to have been using contraceptives currently [OR=0.016,95% CI 0.002-0.125]. 8(42%) of the non-user reported stock out of contraceptive, and another 8(42%) of the same group reported they got tired and left as reasons for missing contraceptives [OR= 0.571 95% CI

0.170-1.916], while 48(67%) of the non-user and 30(54%) of user reported paying for contraceptive services. [OR= 0.577 95% CI 0.281-1.183].

Multivariate logistic regression of all significant variables

The following variable; age, education level, marital status, decision, willingness to bear more children, having used contraceptives within 12 months and ever missing contraceptives were statistically significant on bivariate analysis and therefore were ran through a Multivariate Logistic Regression model (Table 3).

At multivariate stage, all statistically significant variables in the bivariate and odds ratios of the

Table 3: Multivariate logistic regression model.

Predictor/ Characteristics	Variable	Adjusted/ Standardized Odds ratios	P-value	95% CI
Age	≤20	1		
	21-25	0.271	0.253	0.029-2.548
	26-30	1.532	0.711	0.161-14.581
	31-35	6.07	0.342	0.148-249.742
	≥36	2.003	0.703	0.056-71.513
Education level	None	1		
	Primary	18.47	0.255	0.122-2790.426
	Secondary	10.274	0.375	0.060-1769.679
	University/tertiary	29.356	0.295	0.053-16322.600
Marital Status	Single	1		
	Married	0.497	0.651	0.024-10.300
	Separated/divorced	1		
	Widowed	1		
	Cohabiting	1		
Decision maker	Husband/male partner	1		
	Wife/female partner	0.174	0.124	0.019-1.616
	Both partners come to consensus	1.171	0.867	0.175-7.921
	Not applicable	0.737	0.855	0.028-19.435
Willingness to bear more children	Yes	1		
	No	3.507	0.396	0.193-63.564
Willingness of partner to bear more children	Yes	1		
	No	0.835	0.941	0.007-99.145
	Not sure/don't know	0.687	0.804	0.035-13.487
	Have no partner	1.868	0.654	0.121-28.743
Used FP in the last 12 Months	Yes	1		
	No	0.321	0.464	0.015-6.727
Ever missed contraceptives	Yes	1		
	No	1.218	0.794	0.276-5.383
	Don't remember	0.033	0.155	0.000-3.642

Source primary data

confounders were adjusted to give adjusted odd ratios at 95% confidence intervals. From the (Table 3), most the variables lost their levels of significance after adjusting for co-founders but the model still remained a good fit and the dependent variables caused quite a variation in the independent variables.

A high proportion 70(95.89%) of respondents who had knowledge/information about contraceptive methods were actually using them. A prediction revealed that respondents who had no knowledge/ information about contraceptives were at 88% probability of not using them compared to their counterparts with

knowledge/information about contraceptives. [(p=0.020, <0.05) OR=0.120 95% CI 0.009-0.687]. This was in agreement with the Cambodian survey, Knowledge, Attitude and Practice (KAP) of Family Planning among Married Women in Banteay Meanchey (Cleland, 2009). In that study; a total number of 139 married women aged from 18-49 years old were interviewed. The highest percentage of respondents was women in the age group of 25-29 (31%) of respondents. The mean age of respondents was 32.6 years old. where Knowledge of any modern contraceptive method among respondents was almost universal (99.3%).

The Cambodia Demographic and Health Survey 2005 also showed similar results that 99% of married women knew of at least one method of modern contraceptive. The finding further agrees with Kessy (2006) who indicated (More than two thirds, 213 (67.4 %) of respondents who participated in that study had adequate level of knowledge on family planning services compared to 103 (32.6 %) who had inadequate level of knowledge about contraceptives.

Physical access and fear of side effects

Besides, after multivariate logistic regression, physical access, fear of side effects and health worker's behaviour were not significantly associated with modern contraceptive utilization. These findings are inconsistent with the Ethiopian study which showed that, availability and accessibility of contraceptive supplies influenced the use of contraceptive methods (Gizaw *et al.*, 2011). A similar study in Bangladesh also indicated that the main reasons for women not visiting MCH clinics were non availability of commodities, behaviour of service providers and long waiting times (Zainab *et al.*, 2001).

Other hindrances

Availability and accessibility of contraceptive methods, long waiting time and health worker's behaviour influence were not statistically significant on the utilization of modern contraceptives after adjusting for confounders, however the bivariate logistic model revealed that; 42% of the non-user reported stock out of contraceptive, and another 42% of the same group reported they got tired and left as reasons for missing contraceptives, while a big percentage 67% of the non-user and 54% of user reported paying for contraceptive services. These findings were consistent with those from the key informant interview where Majority of service providers reported that, availability of contraceptive methods was not a problem although stocks out of some long-term methods like insertions, IUDs and occasionally injectable occurs.

Nevertheless, it was observed from the in-depth interview with the service providers that most of the long-term methods were out of stock and less or no skilled personnel available to provide such methods. Suggestions were that all contraceptive methods should be available to all health facilities including private ones and trainings for provision of long-term methods be done. This is in agreement with other studies in Iran, and Ethiopia and Bangladesh and Cambodia. Non availability of contraceptive methods for users (93%) was also reported as a factor that would hinder the use of contraceptives. As for non-users (78%) reported that

religious beliefs will hinder their use of contraceptive methods. There was a significant association between availability, religious beliefs and refusals by husband and partner and contraceptive methods use ($p < 0.001$) (Cleland, 2009; Akol, et al., 2009).

Conclusion

The prevalence of modern contraceptive utilization for women of reproductive age in Namutumba district is generally low compared to the national average for rural women of the same age group in Uganda as indicated by UDHS. Socio-demographic characteristics like education level, place of residence and parity were found to influence the utilization of contraceptive methods among women of reproductive age. Socio-cultural characteristics like husband/partner support were crucial in influencing the use of contraceptive methods. Access to information and services was a major health system factor influencing the utilization of modern contraceptives. A large portion of those who were not using modern contraceptives were mainly peasants residing in the rural areas. This is an indication of unmet need of modern contraceptives in the district since they form the largest part of the district population.

Recommendations

Inter-sectoral corroboration between the district Education department and other departments should take course to help improve the level of Uganda primary education enrolment. This is because, with formal education it is easier to make informed choices because of wide understanding of issues, including health as compared to one without formal education, and it is easy to put information delivered by health workers in the right context. Programs to promote male involvement should be developed to curb the tendency of discouragement of contraceptive utilization by husbands, as the findings of this study clearly indicates about 20% of nonuser being discouraged by husbands. Since this study did not involve men, further studies are needed to determine the extent of use of contraceptive methods among men and associated factors. The district health office should pick interest, follow up and therefore take action on the findings that there exists out of pocket payment for contraceptive services at health facilities following the result that 67% of non-users and 54% of users were paying for modern contraceptive services.

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