ORIGINAL ARTICLE

Determinants of Contraceptive Use among Muslim Women in Mbale City in the Eastern Region of Uganda

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ABSTRACT

Family planning is broadly acknowledged as a fundamental approach in public health for enhancing maternal and child health, remarkably preventing 32% of maternal deaths and 10% of child deaths. Lower levels of contraceptive uptake are observed among Muslim women than women of other faiths. This study investigated the determinants of contraceptive use among Muslim women of child bearing age in Mbale city in Uganda. This community-based cross-sectional study was conducted among 374 Muslim women using interviewer-administered electronic questionnaires. The mean age of the participants was 338.8 years. The proportion of Muslim women who were currently using contraceptives was 32%. The associated factors included acceptability of family planning in the community (AOR=2.2, 95% CI: 1.104–4.314, p=0.025), desire to have more children later (AOR=6.8, 95% CI: 2.646–17.583, p<0.000), and counselling from a health worker on family planning (AOR=10.9, 95% CI: 5.372–22.013, p<0.001). The contraceptive use was relatively low among Muslim women. There is need to strengthen community-based family planning programs while engaging religious/community leaders and intensifying family planning counselling by health workers.

Keywords: Contraceptives, Muslim women, family planning, Uganda

International Journal of Human and Health Sciences Vol. 10 No. 04 October'26

DOI:https://doi.org/10.31344/ijhhs.v10i4.1002

INTRODUCTION

Family planning is a widely recognized key public health strategy for enhancing maternal and child health, remarkably preventing 32% of maternal deaths and 10% of child deaths. It does this by allowing women, for example, to decide on when to have births, keeping family size to what they desire, and spacing pregnancies at safe and desirable intervals. Contraceptive prevalence rate is a fundamental indicator to measure global and country specific progress towards the achievement of the 2030 family planning agenda.[1,2] However, global and regional research revealed regional and religious variations in contraceptive prevalence, with generally lower prevalence rates among Muslim populations; and in SSA compared to global averages.[3-6] A study done on among American Muslim women found a high prevalence of contraceptive use at 96.5%,[5] while in Kenya, a very high prevalence of 90.1% was reported among all women of reproductive

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age.[7] However, a separate study done among Muslim women highlighted regional disparities: while contraceptive use was moderate in Lamu (32%), it was very low in Wajir (18%), reflecting the significant influence of religion in Wajir where the community is predominantly Muslim.[3]

In Uganda; despite the increase in contraceptive use from 14% in 2000-01 to 38% in 2022,[8] the unmet need for family planning remains high at 28% among married women and 32% among sexually active unmarried women.[9] The demand for family planning remains at 66%, yet only 43% of women have their family planning demand met. The TFR was estimated at 5.2 children per woman in 2022; a shift from 5.4 in 2016, 6.7 in 2011, and 6.9 (and 7.4 among women in rural areas) in 2001. However, there are huge differences among regions varying between 3.7 in Kampala and 6.7 in Karamoja while Elgon region; where Mbale city is located, 4.8 children per woman.[8] These rates are still high compared to the global target projection of 3.1 births per woman in SSA by 2050 and 2.1 by 2100.[10]

Islam attaches prominence to health and favors procreation while emphasizing responsible parenting as children are regarded as a heavenly blessing. Various verses from the Qur'an and prophetic teachings have been interpreted by the Islamic scholars in support of the use of contraceptives if used within the said limitation.[11] According to a renowned Islamic Philosopher, "contraception is acceptable as long as it does not endanger the woman's health or require permanent sterilization".[12] Despite this and more evidence and rulings pointing to the acceptability of particular modern methods of contraception in Islam inside marital boundaries, a portion of the Muslim heads are still against use of FP based on a number of factors.[11]

Despite acceptability of FP in Islam, studies have shown lower uptake of contraceptives among Muslim women compared to women of other faiths. A study conducted in Kampala Uganda revealed a CPR of only 29% among Somali women-a predominantly Muslim community,[13] yet the general rate among all women in the same district is 45%. The level of uptake of contraceptives among Muslim women in Elgon region and particularly Mbale city is not known.

Muslim women, who form a significant proportion of the population in Mbale city in Uganda may face unique barriers rooted in religious beliefs and socio-cultural dynamics, leading to misconceptions, negative attitudes/rejection of family planning, low social networks and lack of accurate religious knowledge on family planning.

Data on contraceptive use among Muslim women In Uganda, remains very scarce. While the available evidence is not specific to Muslim women, contraceptive use is relatively low compared to global figures. A previous report showed a regional disparities i.e., lower rates in the Eastern region (57%) compared to the Central region (65%).[14] Within Mbale district, a previous study reported a total CPR of 33.7%, with a modern CPR of 30.86%.[15] These findings suggest that while modern contraceptive use is rising globally, there are context specific disparities with Muslim populations significantly affected.

METHODS

This community-based cross-sectional study was carried out among 374 Muslim women of child-bearing age living in Mbale City in Uganda. Mbale City comprises of two divisions; Northern division with five parishes and Industrial division with four parishes. Mbale city is a multicultural urban setting having a population of 156,002 women, which is approximately 54% of its total population;[16] with a significant proportion of it being Muslims. According to Health Management Information System, Mbale City has up to 16 Government and 12 Private-not-for-profit (PNFP) facilities offering family planning services. This study employed a multistage cluster sampling technique. Mbale City divisions formed the first stage clusters. Parishes within these divisions formed the second stage clusters. In the third stage, Muslim households with eligible women were selected from each parish using simple random sampling; Since up-to-date registers of Muslim households were not available for parishes, we worked with the local leaders (LC1s and VHTs) from each parish and conducted rapid household listing of all Muslim households and assigned them unique Ids (parish-based codes); a proportional-to-size number of Muslim households was then randomly selected using a lottery method (all Ids were written on small identical papers for the lottery draw). One eligible Muslim woman per household was then randomly selected.

The dependent variable was contraceptive use.

Contraceptive use was measured by self-reported current use of either a barrier or hormonal method, IUD or surgery. The independent variables of the study were; Sociodemographic factors (which included; Age, Education, Marital status, Income status, Employment status and Media exposure), Sociocultural factors (included; Acceptability of Family Planning in Culture, Partner Communication and Permission, Desire for More Children, Religious Beliefs and Interpretations and Religious Leaders' Influence) and Health System factors (which included Distance to Health Facility, Availability of Preferred Methods and Counselling on family planning by a health worker).

A structured questionnaire was used to collect quantitative data on all the different variables. Content validity of the questionnaire was assessed using Lawshe's Content Validity Ratio (CVR). The instrument obtained a Content Validity Ratio (CVR) of 1.0, exceeding the minimum acceptable value of 0.78 for four experts and hence indicating adequate content validity. To determine the reliability of the structured questionnaire, a pre-test was conducted on a sample of 10 Muslim women of reproductive age in Nabumali; which is adjacent to but outside Mbale City. The reliability of the questionnaire was assessed using Cronbach's Alpha, which yielded a value of α=0.85, indicating good internal consistency of the instrument. The questionnaire was uploaded into a computer-based kobo. Data was directly entered into the kobo tool by the research assistants using mobile phones and then downloaded and viewed in excel.

Data was analysed using Statistical Package for Social Sciences (SPSS) version 23.0 for Windows. Descriptive analysis was done; percentages and frequency counts were obtained for categorical variables such as contraceptive use, marital status, education level, and general contraceptive use was computed. Mean was computed for numerical variables such as age. Possible relationships between contraceptive use and independent variables were determined by cross-tabulating predictor variables with the outcome variable, using binary logistic regression. P-values were computed and the threshold was set at $p < 0.05$. Significant variables were subjected to further analysis. Crude Odds Ratios were utilised to establish the strength of the associations between contraceptive use and the independent variables. Multivariate logistic regression was conducted to all predictors that were found statistically significant ($p<0.05$) at bivariate so as to identify independent predictors of contraceptive use and control for confounding factors. Results were presented as AOR with 95% CI and p-values to determine statistical significance (which was assessed based on a p-value threshold 0.05 in the final model).

RESULTS

The study included a total of 374 participants from all the parishes in Mbale City; with Nkoma parish having the largest proportion 101 (27%) and North Central having the least 12(3%). The mean age of respondents was 338.8 years. Many of the respondents 157(42%) were aged between 35 and 49, 261(70%) were married and 156(42%) attained secondary level of education. A moderate number of respondents 143 (38%) were employed, majority of them 224(60%) earned less than UGX 200,000 per month and 200 (53%) had four or more children (Table 1). 119(32%) respondents reported current use of contraceptives at the time of the survey and 160 (43%) reported that they had ever used contraceptives. The most commonly used contraceptive method was injectables 100 (27%) while surgical sterilization was least reported 1(0.3%). None of the respondents reported use of patches, vaginal rings, diaphragms, or cervical caps (Table 2). At bivariate analysis, sociodemographic factors that showed significant association with contraceptive use included age group (COR=0.7, 95% CI: 0.497–0.985, p=0.041), marital status (COR=0.6, 95% CI: 0.460–0.769, p<0.000) and employments status (COR=0.7, 95% CI: 0.435–0.986, p=0.043). Among sociocultural factors; community acceptability (COR=0.4, 95% CI: 0.316–0.562, p<0.000), partner discussion (COR=0.5, 95% CI: 0.320–0.650, p<0.001), partner approval (COR=0.6, 95% CI: 0.411–0.779, p=0.001), desire for more children (COR=0.7, 95% CI: 0.554–0.947, p=0.019), acceptance in Islam (COR=0.3, 95% CI: 0.155–0.493, p<0.001) and religious leaders' support (COR=0.2, 95% CI: 0.128–0.427, p<0.000) were statistically significant. Among health system factors; significant factors were receiving FP counselling from a health worker (COR=3.5, 95% CI: 2.544–4.908, p<0.000) and availability of contraceptives (COR=0.2, 95% CI: 0.065–0.555, p=0.002). At multivariate level, after controlling for potential confounders, variables that were

significantly associated with contraceptive use included; acceptability of family planning in the community, current desire for having more children and receiving family planning counselling from a health worker (Table 3).

Table 1: Sociodemographic characteristics of the study participants (N=374)

Variables	Frequency	Percentage
Age group (in years)		
15-24	81	22
25-34	136	36
35-49	157	42
Level of education		
No formal education	31	8
Primary	59	16
Secondary	156	42
Tertiary	128	34
Marital status		
Divorced	14	4
Married	261	70
Single	90	24
Windowed	9	2
Employment status		
Employed	143	38
Not employed	135	36
Self employed	96	26
Monthly household income		
Less than 200000	224	60
200000-500000	124	33
Above 500000	26	7
Number of children		
1-2	82	22
3-4	92	25
More than 4	200	53

Table 2: Methods of contraceptives used (N=218)

Methods used	Frequency	Percentage
Pills	38	10
Injectables	100	27
Implants	33	9
Patches	0	0
Vaginal ring	0	0
IUD	39	10
Condoms	7	2
Diaphragm	0	0
Cervical caps	0	0
Surgical/ Sterilization	1	0

DISCUSSION

In the present study, only 32% of respondents reported current use of contraceptives, while 43% reported that they had ever used contraceptives. The relatively low level of current contraceptive use among Muslim women in Mbale City in Uganda may be explained by several contextual factors such as religious perceptions regarding family planning, limited male partner support, fear of side effects, and prevailing community norms that influence reproductive decision making. In addition, some women may discontinue contraceptive use after experiencing side effects or when they desire additional children, which may explain why the proportion of women who had ever used contraceptives was higher than those currently using them. The study findings are consistent with the national average of 33% among all women aged 15-49 years; however, for Elgon region in particular, the rate was relatively lower than the general contraceptive prevalence rate which is at 48% as reported in the Uganda DHS 2022.[17] This indicates a lower utilisation rate among Muslim women which could be attributed to the unique cultural and religious influences faced by muslim women that shape their contraceptive use. The findings were comparable with results of a study among Muslim women of reproductive age in Kenya that found a CPR of 32.8% in Lamu county.[3] The findings were however much higher compared to findings in the same study that reported a prevalence rate of only 3.4% in Wajir, a predominantly Muslim

Table 3: Bivariate and Multivariate Analysis of Factors Associated with Contraceptive Use

Variables	Contraceptive Use		Bivariate			Multivariate		
	No (%)	Yes (%)	COR	95% CI	p-value	AOR	95% CI	p-value
Age group								
15-24	81 (22)	19 (24)	1			1		
25-34	136 (36)	56 (41)	0.7	[0.497 - 0.985]	0.041*	1.3	[0.462 - 3.406]	0.656
35-49	157 (42)	44 (28)	0.4	[0.275 - 0.552]	0.000*	0.8	[0.282 - 2.520]	0.759
Level of Education								
No formal education	31 (8)	12 (39)	1					
Primary	59 (16)	16 (27)	0.6		0.261			
Secondary	156 (42)	47 (30)	0.7	[0.734 - 4.172]	0.349			
Tertiary	128 (34)	44 (34)	0.8	[0.257 - 0.436]	0.651			
Marital status								
Windowed	14 (4)	3 (21)	1			1		
Divorced	261 (70)	97 (37)	0.3	[0.076 - 0.978]	0.046*	1.8	[0.089 - 37.01]	0.700
Married	90 (24)	18 (20)	0.6	[0.460 - 0.769]	0.000*	13.8	[0.951 - 200.3]	0.054
Single	9 (2)	1 (11)	0.3	[0.149 - 0.419]	0.000*	5.8	[0.360 - 94.98]	0.214
Employment status								
Employed	143 (38)	54 (38)	1			1		
Not employed	135 (36)	27 (20)	0.3	[0.164 - 0.381]	0.000*	0.6	[0.278 - 1.373]	0.237
Self employed	96 (26)	38 (40)	0.7	[0.435 - 0.986]	0.043*	0.8	[0.366 - 1.871]	0.65
Household income								
Less than 200000	224 (60)	51 (23)	1					
More than 500000	26 (7)	9 (35)	0.5	[0.236 - 1.188]	0.123			
200000 - 500000	124 (33)	59 (48)	0.9	[0.638 - 1.291]	0.590			
Number of children								
1-2	82 (22)	5 (6)	1					
3-4	92 (25)	50 (54)	1.2	[0.790 - 1.794]	0.405			
More than 4	200 (53)	64 (32)	0.5	[0.350 - 0.633]	0.085			
Community acceptance								
No	256 (68)	57 (22)	1			1		
Yes	118 (32)	62 (53)	0.4	[0.316 - 0.562]	0.000*	2.2	[1.104 - 4.314]	0.025*
Partner discussion								
No	89 (24)	45 (51)	1			1		
Yes	285 (76)	74 (20)	0.5	[0.320 - 0.650]	0.000*	1.5	[0.611 – 3.533]	0.390
Partner's permission								
No	270 (72)	72 (27)	1			1		
Yes	104 (28)	47 (45)	0.6	[0.411 - 0.779]	0.001*	0.5	[0.210 - 1.240]	0.137
Desire more children								
No more children	219 (59)	92 (42)	1			1		

Variables	Contraceptive Use		Bivariate			Multivariate		
	No (%)	Yes (%)	COR	95% CI	p-value	AOR	95% CI	p-value
Want more later	73 (19)	8 (11)	0.7	[0.554 - 0.947]	0.019*	6.8	[2.646 - 17.58]	0.000*
Want more soon	82 (22)	19 (23)	0.3	[0.181 - 0.504]	0.000*	3.7	[1.070 - 13.10]	0.039*
Allowed in Islam								
No	331 (89)	92 (28)	1			1		
Yes	43 (11)	27 (63)	0.3	[0.155 - 0.493]	0.000*	1.3	[0.441- 3.925]	0.624
Islamic beliefs effect								
Somewhat	22 (6)	14 (64)	1					
Extremely	295 (79)	74 (25)	1.8	[0.734 - 4.172]	0.207			
Not at all	57 (15)	31 (54)	0.3	[0.257 - 0.436]	0.35			
Religious leaders support								
No	332 (89)	91 (27)	1			1		
Yes	42 (11)	28 (67)	0.2	[0.128 - 0427]	0.000*	2.5	[0.836 - 7.742]	0.100
Media exposure								
Radios	114 (30)	35 (31)	1					
TV	280 (75)	98 (35)	0.8	[0.734 - 4.172]	0.416			
Mobile phone/social media	358 (96)	114(32)	1.4	[0.257 - 0.436]	0.636			
Distance of health centres								
Less than 1km	183 (49)	54 (30)	1					
More than 5km	23 (6)	7 (30)	0.8	[0.734 - 4.172]	0.596			
1-5 km	168 (45)	58 (35)	0.8	[0.257 - 0.436]	0.698			
Health workers' counselling								
Yes	240 (64)	28 (12)	1			1		
No	134 (36)	91 (68)	3.5	[2.544 - 4.908]	0.000*	10.9	[5.372 - 22.01]	0.000*
Availability								
Moderate	107 (29)	16 (15)	1			1		
Not accessible	24 (6)	4 (17)	0.2	[0.065 - 0.555]	0.002*	1.1	[0.281 - 4.370]	0.884
Very accessible	242 (65)	99 (41)	0.7	[0.536 - 0.895]	0.005*	1.9	[0.882 - 4.115]	0.101

*=significant.

county,[3] which was ascribed to education level and believe that FP is not allowed in Islam. Similar findings were reported in a study among Muslim women in Nepal that reported contraceptive use of only 47.3% despite respondents having good knowledge on modern contraception.[6] A lesser prevalence was observed in study done in Uganda that found a CPR of 29% in Somali women living in Kampala, Ugnada.[13] In contrast, a study done among American Muslim women in the United States found a much higher prevalence of contraceptive use at 96.5% among sexually experienced participants.[5] This was attributed to the belief that Islam allows the use of contraceptive methods that are reversible, and likely reflects the influence of better healthcare access and education in high-income settings despite cultural or religious concerns. This suggests that, although religion is often perceived as a barrier, strategic engagement with Islamic leaders and institutions can enhance contraceptive acceptance. Generally, this study found a

relatively low CPR. This could be attributed to lack of clear and authentic information about the Islamic position on contraceptive use, which may foster misinformation in the community and inhibit uptake among Muslim women, and inadequate counselling services availed by health workers.

The study revealed that community acceptance of FP was a significant predictor of contraceptive use. According to the study findings, women who reported that FP was acceptable in their community were twice as likely to use contraceptives as compared to those from communities that did not support family planning. This may be because supportive community norms reduce stigma and encourage open discussion about family planning, thereby enabling women to seek and use contraceptive services. The findings aligned with findings from Kenya study among Muslim communities that found that women who perceived FP as culturally acceptable were five times more likely to use contraception compared to those who did not.[3] This suggests that positive cultural framing of FP can encourage its uptake. In contrast however, a Tanzanian study found that cultural factors were the least cited barrier (10%) to FP use among women, indicating that other constraints may weigh more heavily in some settings.[18] These findings emphasize that religion itself is not a direct barrier; rather, the interpretation and messaging of religious teachings determine the outcome. In relation to the HBM, endorsement from trusted religious figures increases perceived cues to action, motivating behaviour change.

Our study also found that current fertility preference was another significant predictor of contraceptive use with 6.8 times more likelihood among women who desired to have more children later while those who wanted more children soon were only 3.7 times more likely to use contraceptives compared those who wanted no more children. This finding indicates that contraceptives are primarily used for spacing rather than limiting births among Muslim women. These findings align with studies done in; Yemen that found that women who wanted more children were significantly less inclined to use modern contraceptives;[19] in Eastern Ethiopia where the fertility preferences reduced contraceptive use,[20] and in SSA where AGYW with high fertility preferences also had lower contraceptive use.[4] The findings were different from a study done in Tanzania among adolescents and young women that found that fertility preferences were not significantly associated with contraceptive use.[21] From a HBM viewpoint, women who desire future pregnancies still perceive a benefit in temporary contraceptive use to safeguard maternal and child health, reflecting a balance between religious beliefs and health needs. The results of this study on socio-cultural factors highlight that community norms and supportive religious discourse play a more powerful role than individual beliefs alone and hence underscoring the significance of culturally sensitive, faith-based interventions that promote family planning within the framework of Islamic teachings.

Our study revealed that receiving family planning counselling from a health worker was the most significantly associated factor with contraceptive use with those who had received counselling from health workers about 11 times more likely to use contraceptives as compared to those who had not. This may be because counselling improves women's knowledge about available contraceptive methods, addresses misconceptions about side effects, and increases confidence in using modern methods. In addition, counselling provided by trained health workers may be perceived as credible and trustworthy, thereby influencing women's reproductive health decisions. This finding aligns with evidence from a study done in Ethiopia which revealed that women who were counselled by a health worker reported higher contraceptive uptake[22] and women who are counselled by a health worker on FP during maternal visits to hospitals are more likely to use modern contraception. Counselling by health workers improves women's knowledge, confidence, and perception of benefits, while addressing myths, side effects, and fears; thereby reducing perceived barriers as proposed in the Health Belief Model (HBM). These findings highlight the critical role of the health workforce in improving contraceptive use.[23]

The major study limitation was failure to explore deeper cultural and religious perceptions influencing contraceptive decisions among Muslim communities since it was particularly a quantitative study.

CONCLUSION

The study highlighted major determinants of contraceptive use among Muslim women. The

proportion of women using contraceptives was 32%. Community acceptance of FP, desire for more children and counselling by a health worker significantly predicted contraceptive use; demonstrating a strong influence of community norms and fertility preferences on contraceptive use and underscoring the importance of provider engagement, quality counselling, and culturally sensitive service delivery. We recommend to intensify family planning awareness campaigns across all parishes to enhance community acceptability of modern contraceptives. Health workers and midwives should incorporate structured fertility-preference counselling into ANC, PNC, and child health clinics. The Uganda Muslim Supreme Council, the District Kadhi's Office, Imams, and Muslim female religious leaders should take a central role in communicating Islam-appropriate FP information to clarify Islamic views on family planning and dispel misconceptions that hinder contraceptive uptake among Muslim women. Apart from that institutionalizing family planning counselling across all service delivery points, including OPD, ANC, PNC, and ART clinics is important while strengthening the capacity of health workers and VHTs to offer consistent, client-centred FP counselling is crucial.

Conflict of interest: None declared.

Funding source: Self-funded.

Ethical considerations: Ethical approval was granted by the Research Ethics Committee of Uganda Christian University (UCU-REC-2025-2066), Uganda. Administrative approval and permission to collect data was given by the City Health Officer of Mbale City, Uganda, and later from the local leaders of the different parishes.

Authors' contribution: All authors were equally involved in study design, data collection, compilation and analysis as well as manuscript writing, editing and final submission.

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