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Intention to use modern contraceptives among current nonusers of reproductive age in Uganda

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Abstract

Background Women's intention to use contraceptive methods is critical for better visualization of future needs and for making it more likely to translate into actual use. This study sought to examine the determinants of intention to use modern contraceptives among current non-users of reproductive age in Uganda.

Methods The study used secondary data from the 2016 Uganda Demographic and Health Survey (UDHS) dataset. The sample size consisted of 13,088 women aged 15–49 who were not using contraception. The dependent variable was the intention to use contraceptives. STATA version 17 was used for data analysis. A binary logistic regression model was used to identify the predictors of intention to use contraceptives at the 5% level of significance.

Results Findings indicated that six in ten (60.2%) non-users of contraceptives had an intention to use them in the future. The odds of intention to use contraceptives were higher among women with secondary education (AOR 1.482, CI = 1.168–1.880), women who desired 3–4 children (AOR = 1.343, CI = 1.135–1.590), women with 3–4 living children (AOR = 1.817, CI = 1.391–2.373), women who have ever used a contraceptive method (AOR = 2.457, CI = 1.686–3.579), and women whose last pregnancy was unwanted (AOR = 1.720, CI = 1.231–2.405). On the other hand, the odds of intending to use contraceptives were lower among women aged 35–44 years (AOR = 0.242, CI = 0.143–0.284) and 45–49 years (AOR = 0.028, CI = 0.017–0.044), Muslim women (AOR = 0.676, CI = 0.559–0.817), Pentecostal women (AOR = 0.708, CI = 0.598–0.837), and formerly married women (AOR = 0.672, CI = 0.517–0.875).

Conclusions The study found that the intention to use contraceptives among Ugandan women not currently using contraception was associated with having secondary education, a preference for having 3–4 children, having 3–4 living children, prior contraceptive use, and experiencing an unwanted pregnancy. The study recommends enhanced access to and completion of at least secondary education for girls. The study further recommends that policymakers and program implementers sensitise communities about the benefits of smaller family sizes through community dialogues highlighting the health, economic, and educational advantages for families and communities.

Keywords Intention, Contraceptives, Uganda

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Background

Worldwide, over 190 million women of reproductive age do not use contraceptives (United Nations, 2019), most of whom are found in sub-Saharan Africa [1, 2]. Contraceptive use remains low in many African countries, unintended pregnancies are common, and the unmet need for contraceptives is high. The current contraceptive nonuse among women of reproductive age in sub-Saharan Africa accounts for nearly 14 million unplanned pregnancies annually and the majority of maternal deaths (66%) [3]. The intention to use modern contraceptives is paramount for a better understanding of the actual future use [4]. Intentions are widely known to predict behaviour in many behavior change interventions, including contraceptive use [5]. In Uganda, understanding this intention is vital, given the country's high rates of unintended pregnancies and unmet need for contraception. Intentions reflect a woman's resolve to adopt family planning methods in the future, indicating a readiness to overcome barriers and unmet needs related to contraceptive access and acceptance. This is particularly important in Uganda, where the unmet need for contraception remains high, indicating a gap between fertility preferences and contraceptive behaviour. Studies show that when women express an intention to use contraception, they are more likely to seek methods and adopt them when they become accessible [6]. Even though there may be many obstacles, a woman with intention may be inclined to use contraceptive methods [7]. Contraceptive use is a key factor in preventing unwanted pregnancies, reducing maternal and child mortality, and improving the lives of women and their families [8]. Contraception allows individuals and couples to decide if and when they want to have children, thereby playing a crucial role in family planning and reproductive health [9]. Modern contraception methods have a significant impact on the health of mothers and their children [7, 10]. It is used to limit family size and avoid unplanned pregnancies [7]. Contraceptive nonuse, a situation where sexually active women do not use any methods of contraception to prevent pregnancy, has significant implications for reproductive health and family planning [11]. In Sub-Saharan Africa's high-fertility countries, 42% of non-users of contraceptives intend to use contraception in the future [12]. In Uganda, the 2016 Demographic and Health Survey indicates that only 39% of married women were using any contraceptive method, while only 34% were using a modern method [13]. Partly as a result of low contraceptive use, fertility remains high in Uganda at 5.2 children per woman. Amidst the low contraceptive use and high fertility rate, there are fertility preferences that favour a large family size, with more than half (61%) of women desiring to have more children. Furthermore, among married women who were currently not using contraception, only 64% said they planned to use contraceptives in the future [13]. Previous studies have shown that socio-demographic factors such as age, place of residence, marital status, education, religion, employment [1, 14], frequency of visits to health facilities [15], and awareness of the ovulation cycle are related to the intention to use contraceptive methods [12]. Information about contraceptive non-use and intention in Uganda is limited because previous studies focused on unmet needs [16], uptake in postpartum women [17], and contraceptive beliefs [18]. The study sought to address this gap and established the determinants of intention to use contraceptives among female non-users of contraception in Uganda. Despite nearly universal knowledge about contraception among women in Uganda, the use of modern contraceptives remains low at 34% (UBOS & ICF, 2018). This gap between knowledge and use contributes to the high prevalence of unintended pregnancies, affecting 46% of women of reproductive age. Several barriers impede contraceptive use, including cultural and religious beliefs [19], limited access to family planning services, misinformation, fear of side effects [20], and inadequate support from partners and communities [21]. Additionally, only 64% of currently married women who do not use contraceptives plan to use them in the future [13], indicating potential issues with perceived acceptability and future uptake of contraceptive methods. Despite efforts to promote family planning and contraceptive use, several critical gaps remain in Uganda, contributing to the low utilization of contraceptives and the limited intention to use contraceptives in the future. There has been insufficient integration of comprehensive sexual and reproductive health education in schools and community programs [22], leading to persistent misconceptions and a lack of informed decision-making among women [23]. Several studies in Uganda have explored the use of contraceptives (Andi et al., 2014; Anita et al., 2020; Kabagenyi et al., 2015; Namasivayam et al., 2020; Ndugga, 2019; Wamala et al., 2017) and the reasons for contraceptive nonuse among women (Otim, 2020). However, there is limited information on the intentions to use contraceptives among current non-users and the factors influencing these intentions. This study aims to address this gap by examining the determinants of the intention to use contraceptives among non-users.

Aim/objective of the study

The study aimed to determine the factors associated with intention to use contraceptives among current non-users of reproductive age in Uganda. The study attempted to answer the research question: What are the determinants of the intentions to use modern contraceptives among non-users of the reproductive age? We hypothesized that women who experienced unwanted pregnancy are more likely to have the intention to use contraceptives,

women with previous pregnancy complications are more likely to have the intention to use contraceptives, and women with at least three children are more likely to have the intention to use contraceptives compared to their counterparts.

Conceptual framework

The conceptual framework for this study was based on the theory of planned behaviour (TPB) (Ajzen, 1985). TPB postulates that the likelihood of an individual engaging in healthy behaviour is correlated with the strength of his or her intention to engage. The intention to use contraceptives is shaped by the interplay of behavioural beliefs, normative beliefs, control beliefs, as well as social demographic factors. Behaviour belief in this study was proxied by child mortality, type of marriage, and preferred number of children. These factors may directly affect parity or indirectly affect parity by encouraging or discouraging the intention to use contraceptives through reproductive attitudes. For instance, most women who have experienced child mortality usually have positive attitudes towards replacing the dead child and are likely to want to replace the dead child [24]. Also, co-wives' competition within polygynous households may affect the intention to use contraceptives by impacting parity through reproductive attitudes that discourage the intention to use contraceptives. Given that contraceptive use is low among Ugandan women, the desire of the individual woman not to have a pregnancy termination or a repeat pregnancy termination will impact her intention to use contraceptives. Studies have already shown that contraceptive use increases when post-abortion family planning services are provided following pregnancy termination [25, 26]. Normative belief was a proxy in the study by fertility desire. These factors influence the extent to which women meet partner or societal expectations for additional children. For instance, regardless of the previous number of children, remarried women in most parts of Uganda are expected to raise additional children in the new marriage for optimal marital satisfaction. This may affect their parity with effect on intention to use contraceptives. Also, evidence has shown that men have higher fertility desires than women [27], given male dominance in reproductive decisions. In many households' women do not have the power to plan their fertility. The occurrence of a mistimed or unwanted pregnancy among such women is more likely to increase their parity, which may create a need to evaluate future use of contraceptives. Control belief in the study was proxied by knowledge about family planning and exposure to mass media about contraceptives. These factors represent the extent to which women may independently access contraceptive information or services without or with little male partner involvement. The more positive the beliefs and knowledge about contraception, and the more supportive the social and economic environment, the higher the intention to use contraceptives. In this study, behavioural beliefs, normative beliefs, and control beliefs are the proximate determinants of intention to use contraceptives. The background factors that indirectly influence the intention to use contraceptives include age, women's education level attained, place of residence, and employment status. These factors shape the proximate determinants (behavioural beliefs, normative beliefs, and control beliefs) and thus influence the intention to use contraceptives as shown in the Fig. 1.

Methods

Data source

This study used secondary data from the 2016 (UDHS). The survey was conducted by the Uganda Bureau of Statistics (UBOS) with technical support from Inner City Fund ICF International and collected demographic and health indicators data. The study used a two-stage sampling design. In the first stage, enumeration areas were selected from a list of clusters, and in the second stage, households were selected, and all women aged 15–49 from the households, including visitors who stayed in the household the night before the survey, were eligible for the interview. Women were asked to report about their current use of any method of contraception to avoid or delay pregnancy. This study was conducted on a sample of 13,088 women aged 15–49 who reported that they were not using any contraceptives at the time of the survey as illustrated in Fig. 2.

Measure of the outcome variable

The outcome variable was the intention to use contraceptives. This variable was derived from questions that asked women to report about their current use of contraceptives. The non-users were further asked to report about their future intentions to delay or avoid getting pregnant. The variable was recoded on a binary scale of 0 = does not intend to use contraceptives and 1 = intends to use in the future.

Measure of explanatory variables

The explanatory variables for this study included age, education, residence, wealth status, place of residence, region of residence, marital status, number of children ever born, preferred number of children, desired sex composition of children, and women's paid employment. Others are knowledge about contraceptives, exposure to family planning information, contraceptive decision-makers, and access to family planning services. The selection of the independent variables was based on previous studies and the hypothetical relationship they have with the behavioural intention to use contraceptives. Women's

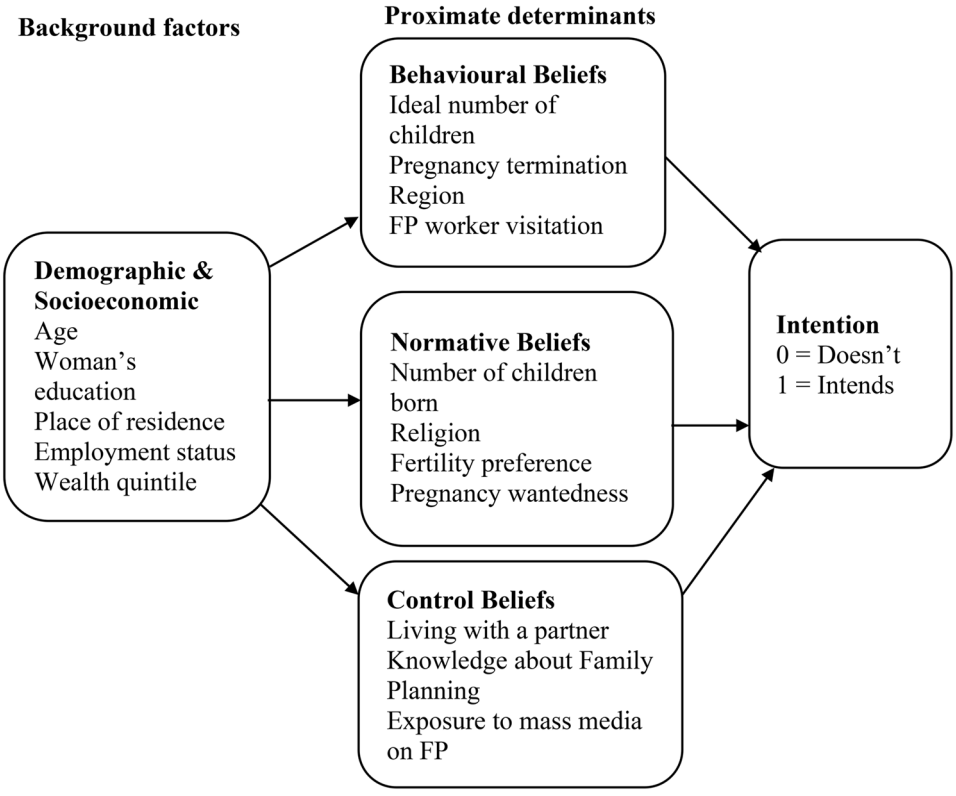

Fig. 1 Conceptual framework for studying the determinants of intention to modern contraceptives in Uganda, Adapted from Ajzen [28]

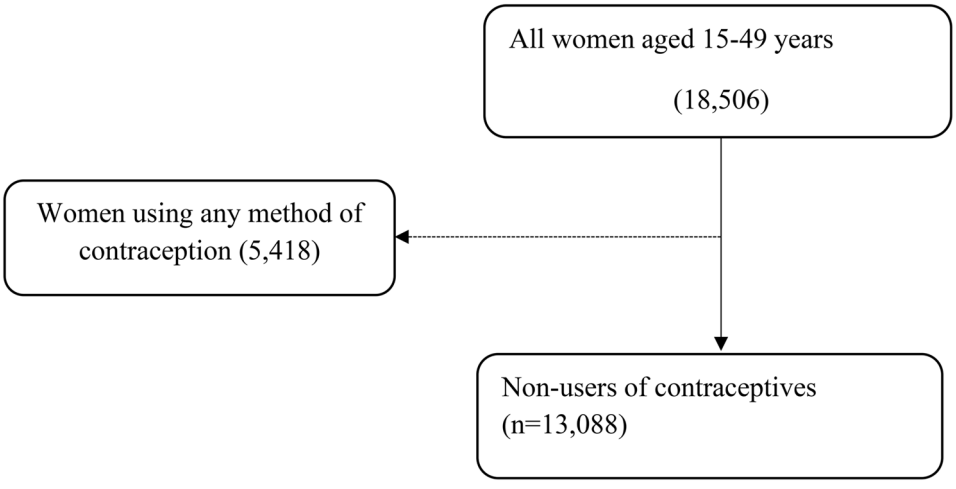

Fig. 2 Derivation of the study sample, source UDHS [29]

level of education was recoded into three categories: no education, primary education, and secondary+, which combined secondary and above. The DHS data had many categories of religion but these were combined into 5 major categories. Women who reported their religious affiliation as having no religion were combined with the other category while Anglicans, Catholics, Muslims, and other Christian religious groups such as Orthodox, SDA, and Born-again were combined into "Other Christians." The 14 regions in the DHS were regrouped into 4 major regions (Central, Eastern, Northern, and Western). The central region comprises Kampala, South Buganda, and North Buganda. The eastern region includes Busoga, Bukedi, Bugisu, Teso, and Karamoja. Lango, Acholi, and West Nile were combined into the northern region, while Bunyoro, Tooro, Ankole, and Kigezi formed the western region. The variable place of last delivery was recoded into 3 categories "home" which combined all home-based

deliveries reported by the woman, "health facility" which comprised both public and private health facility-based deliveries and the other category for all the others. All these variables were selected based on the reviewed literature.

Statistical analysis

Statistical analysis was done using STATA (Version 17). The data was weighted to cater for the complex nature of the sampling design and ensure the representativeness of the study population using the svyset command. The analyses were done at three levels. At Univariate analysis, the frequency and percent distribution of women by socio-demographic characteristics were performed.

At the bivariate level, a cross-tabulation of each of the explanatory variables and intention to use contraception was done. The Pearson chi-square test was used to determine the significant explanatory factors for regression analysis. Binary logistic regression analysis was employed to identify predictors of intention to use contraceptives. Crude and adjusted odds ratios and their 95% confidence intervals (95% CI) were estimated. All variables with a ρ-value less than or equal to 0.05 were considered to have a significant association with intention to use. STATA's Collin command was used to perform multicollinearity diagnostic tests on the significant independent variables. This command shows results on variance inflation factors (VIF) and tolerance among others. All the variables had VIFs that were less than 10 and were considered for further analysis. At the multivariate level, since the intention to use modern contraceptives was measured on a binary scale (1=Intends and 0=does not intend), the logistic, probit and complementary log-log regression models were all potential models for the study. However, to identify the model that best suits this study, each of the three models was tested for goodness of fit via the link test. The results from the link test show that the test for hatsq was insignificant ($p>0.05$) for all the models. Each of the three models was again assessed for goodness of fit via AIC values. The results from this test revealed that all the models had almost equal AIC values and BIC values. The study used a binary logistic regression model to fit the factors associated with the desire for more children since it had the lowest value of the information criterion. The binary logistic regression model fit this criterion and was used to assess the impact of each statistically significant independent variable ($\rho<0.05$) on the outcome variable (desire for more children), and the results are presented in the form of adjusted odds ratios (AORs) with 95% confidence intervals.

Results

Descriptive characteristics

The socioeconomic characteristics of the women are presented in Table 1. The results showed that six in ten (60.2%) of non-users of contraceptives had an intention to use contraceptives in the future. Results indicate that of the women who had never used contraceptives, half (50%) were aged 15–24 years, more than 3 in 4 (78%) resided in rural areas, more than half (59%) had attained primary level of education, 42% were affiliated to the Catholic religion and 70% were currently working. About one in three (31%) were from the central region, 29% eastern regions, 26% north and 24% western region, 47% preferred a family size of 3–4 children while 44% preferred at least 5 children. In addition, more than half (62%) had ever used a contraceptive method 62% were exposed to mass media family planning messages, and 73% had never been visited by family planning/ Health workers. Furthermore, almost all women (98%) were not covered by health insurance, 44% came from poor households while 37% came from rich households. The findings further indicate that 47% of the women were never married whereas 43% were currently married. One in three (33%) of the women had never given birth, 26% had at least 5 children 24% had 1–2 children ever born and the majority (83%) of the women had never had a terminated pregnancy.

Bivariate analysis of the factors associated with intention to use contraceptives in the future

The findings in Table 2 reveal that the intention to use contraceptives in the future reduced with increasing age, and the association between the age of the woman and the intention to use contraceptives in the future was significant ($P=0.000$). About three-quarters (about 71%) of the women who had the intention to use contraceptives in the future were aged 25–34 years, and 69% were aged 15–24 years. There was a significant association between the age of the woman and the intention to use contraceptives ($p=0.000$).

Similarly, the highest level of education attained had a significant relationship ($p=0.000$) with intention to use contraceptives. 68% of women with at least secondary education and 60% of women with primary education had the intention to use contraceptives in the future. The type of place of residence ($p=0.035$), religion ($p=0.000$), region ($p=0.000$), ever-used contraceptive method ($p=0.000$), family size preference ($p=0.000$), pregnancy wantedness ($p=0.014$), exposure to family planning messages ($p=0.000$), marital status ($p=0.000$), total number of children ever born ($p=0.000$) and history of termination of pregnancy ($p=0.000$) was significantly associated with intention to use contraceptives. The association between the working status of the woman

Table 1 Distribution of respondents by selected characteristics, UDHS 2016

Characteristic	Frequency (*n* = 13,088)	Percent
Intention to use contraceptives		
Intends to use	7879	60.2
Does not intend to use	5209	39.8
Age (years)		
15–24	6,498	49.6
25–34	3421	26.1
35–44	3421	17.2
45–49	915	7.0
Place of residence		
Urban	2934	22.4
Rural	10,154	77.6
Education level		
No education	1645	12.6
Primary	7766	59.3
Secondary+	3677	28.0
Religion		
Anglican	3966	30.3
Catholic	5439	41.6
Muslim	1508	11.5
Pentecostal	196	1.5
Other	1979	15.1
Region		
Central	4047	30.9
East	3809	29.1
North	3447	26.3
West	3254	24.8
Wealth		
Poor	5769	44.0
Middle	2419	18.5
Rich	4900	37.4
Current working status		
Not working	3875	29.6
Working	9213	70.4
Family size preference		
0–2 Children	1063	8.12
3–4 Children	6188	47.3
5 + children	5837	44.6
Age of the last child born.		
Less than year	3,858	43.3
2–3 years	1809	20.3
3 + years	3,241	36.4
Pregnancy wantedness		
Yes	6735	55.5
No	5400	44.5
Ever used a contraceptive method.		
No	8206	62.7
Yes	4882	37.2
Exposure to mass-media FP messages		
No	4975	38.0
Yes	8113	62.0
Living with a partner		
Yes	10,705	81.8
No	2383	18.2
Visited by Health worker		
No	9638	73.6
Yes	3450	26.4
Marital status		
Never married	6138	46.9
Currently married	5615	42.9
Formerly married	1322	10.1
Number of children ever born		
Never given birth	4380	33.5
1–2 Children	3121	23.9
3–4 Children	2160	16.5
5 + children	3427	26.2
Pregnancy termination		
Has ever terminated pregnancy	2200	16.8
Has never terminated pregnancy	10,888	83.2

and intention to use contraceptives in future was not significant (P=0.746). Similarly, wealth (p=0.148), coverage by health insurance (p=0.769) living with a partner (p=0.492), having been visited by a health worker (p=0.248) and having experienced pregnancy complications (p=0.164) were not significantly associated with intention to use contraceptives in the future.

Factors associated with intention to use modern contraceptives in the future

Table 3 shows results of the multivariate binary logistic regression model fit to find out the factors associated with intention to use contraceptives in the future among non-users. The intention to use contraceptives in the future among nonusers was associated with age, education level attained, religion, region, family size preference, marital status, number of children ever born, and knowledge about family planning.

The odds of having the intention to use family planning in the future reduced with an increase in age. Compared to those aged 15–24 years, the odds of intention to use contraceptives reduced among 35–44 years (AOR=0.242, 95% CI=0.143–0.284) and 44–49 years (AOR=0.0208, 95% CI=0. 0.017–0.044) among women who were aged 35–44, 45–49 years respectively. Older women who were not using contraceptives were less likely to have an intention to use contraceptives in the future. The findings also show that women who had attained at least a secondary level of education were 1.5 times more likely (AOR=1.482, 95% CI=1.168–1.880) to have an intention to use contraceptives in the future compared to those who had not attained any level of education.

Compared to Anglican women, Muslim women were 0.6 times less likely (AOR=0.676, 95% CI=0.559–0.817)

to have the intention to use family contraceptives in the future. Similarly, the women who said they were Pentecostals were 0.7 times less likely (AOR=0.708, 95% CI=0.598–0.837) relative to their Anglican counterparts. The findings in the table show regional variation in intention by women who had never used contraceptives to use contraceptives in the future.

The findings also indicate that women who said that they preferred a family size of 3–4 children were 1.3 times more likely (AOR=1.343, 95% CI=1.135–1.590) to have the intention to use family planning in the future than those who preferred 0–2 children. The likelihood of having the intention to use contraceptives in the future among formerly married women was 0.6 times less (AOR=0.672, 95% CI=0.517–0.875) than their never-married counterparts. The findings also reveal that women who reported having given birth to at least 3 children were 1.8 times more (AOR=1.817, 95% CI=1.391–2.373) likely to have the intention to use family planning in the future than their counterparts who had never given birth. Additionally, women whose last pregnancy was unwanted were 1.7 times (AOR=1.7, 95% CI=1.231–2.405) more likely to have an intention for the use of contraceptives than women whose last pregnancy was wanted. Women who said that they knew any family planning method was 2.5 times more likely (AOR=2.457, 95% CI=1.686–3.579) to have the intention to use family planning in the future than those who did not know any method of family planning.

Discussion

Six in ten women (60.2%) reported that they had an intention to use contraceptives in the future. The study revealed that the intention to use contraceptives in the future among current non-users was associated with the age of a woman, education level attained, religion, region of residence, family size preference, marital status, number of children ever born, and ever use of contraceptive method.

With increasing age, the likelihood of using contraceptives in the future decreases. Older women were less likely to intend to use family planning in the future compared to women aged 15–19 years. This finding may be related to the fact that older women might not be sexually active or they have reduced their coital frequency and have attained their desired family size and do not wish to use any more contraceptives. It is also possible that young women may want to delay childbearing as they pursue other careers, such as education and employment. Our finding is in agreement with previous studies in SSA [12, 30], and Ghana [31] which also found that younger women were more likely than older age groups to intend to use.

The findings also show that women who had attained at least a secondary level of education were 1.5 times more likely to have the intention to use contraceptives in the future compared to those who had not attained any level of education. Education is generally known to be an enabler of contraceptive use and intention to use family planning. Previous studies [9, 12] have found that women with formal education have a higher likelihood of intending to use contraceptives than women with no formal education [12]. The finding particularly agrees with studies conducted in Ethiopia, which found that women with secondary education were more likely to intend to use modern contraceptives in the future than women with no formal education [9] and in Ghana, where lower levels of education (no formal education and primary school education) were positively associated with non-intention to use contraceptives [31]. Education has also been reported to influence contraceptive use. Studies in Ethiopia [32], Uganda [33, 34] and Ghana [35] have all highlighted the positive influence of women's higher education attainment on the use of contraceptives, especially the modern methods of contraception. The findings of this study further highlight the importance of higher education attainment by women for future contraception and projected fertility and demographic change. It has been argued that the true demographic dividend is a human capital dividend, and education is a key factor in the demographic dividend [36]. To accelerate fertility decline and boost the use of modern contraceptives, women need to complete at least lower secondary education [37].

Compared to Anglican women, Muslim women and Pentecostal women were less likely (to have the intention to use contraceptives in the future. Religion plays a significant role in the education and sensitisation of members in many aspects, including health. Religious teachings may support or oppose the use of modern contraceptive methods, especially among followers that may be so committed to the religion. This finding is partly in line with those of a study conducted in Ghana, which reported that Islam religion was positively associated with non-intention to use contraceptives [31]. The findings also partly concur with those of a study on contraceptive nonuse among women in Uganda, which revealed that religion predicted contraceptive nonuse in Eastern, Northern, and Western regions with variations [34]. This further highlights the critical role that religion, through its leaders, can play in promoting better health for individual women, families, and society, especially when they are meaningfully involved in programs.

The findings also indicate that women who preferred a family size of 3–4 children were 1.3 times more likely to have the intention to use contraceptives in the future than those who preferred 0–2 children. This could be due in part to the women's desire to use family planning in the

Table 2 Intention to use contraceptives by selected characteristics

Variable	Intention to use contraceptives in the future		*P*-value
	Intends to use (%)	Does not intend (%)	
Age (years)			
15–24	69.6	30.4	**0.000**
25–34	71.0	29.0	
35–44	41.2	58.8	
45–49	11.9	88.1	
Place of residence			
Urban	62.7	37.3	**0.035**
Rural	59.9	40.1	
Education level			
No education	39.4	60.57	**0.000**
Primary	60.1	39.9	
Secondary	68.8	31.2	
Religion			
Anglican	63.2	36.8	**0.007**
Catholic	60.2	39.7	
Muslim	60.2	39.8	
Pentecostal	64.9	35.1	
Other	56.3	43.7	
Region			
Central	61.3	38.7	**0.001**
East	57.2	42.8	
North	62.5	37.8	
West	58.0	42.0	
Wealth			
Poor	59.7	40.3	0.148
Middle	59.8	40.2	
Rich	61.7	38.3	
Current working status			
Not working	60.3	39.7	0.746
Working	60.7	39.3	
Family size preference			
0–2 Children	60.9	39.1	**0.000**
3–4 Children	68.1	31.9	
5 + children	52.1	47.9	
Marital status			
Never married	61.8	38.2	**0.000**
Currently married	36.9	63.1	
Formerly married	51.8	48.2	
Number of children ever born			
Never given birth	61.9	38.1	**0.000**
1–2 Children	69.6	30.4	
3–4 Children	64.7	35.3	
5 + children	47.6	52.4	
Age of the last child born			
Less than year	65.8	34.2	0.210
2–3 years	58.9	41.1	
3 + years	62.4	37.6	
Pregnancy wantedness			
Pregnancy wanted	63.4	36.6	**0.014**
Pregnancy unwanted	67.9	32.1	
Visitation by health worker			
No	60.3	39.7	*0.248*
Yes	61.6	38.4	
Pregnancy termination			
No	61.7	38.3	**0.000**
Yes	55.3	44.7	
Ever used a contraceptive method			
No	31.4	68.6	**0.000**
Yes	61.0	39.0	
Exposure to mass-media FP messages			
No	57.1	42.9	**0.000**
Yes	62.7	37.3	
Living with a partner			
Yes	64.1	35.9	0.492
No	62.8	37.2	

The values with * in the p-value column indicate $p < 0.05$

future after they have had some children, which is largely due to the general preference for higher fertility. Women with fewer children (0–2) may still be within their desired family size, thus delaying contraceptive use because they see additional children as part of their planned family growth. In contrast, women who have reached 3–4 children may feel they are approaching or reaching their desired family size. For these women, the need shifts from spacing to limiting further births to avoid exceeding family size preferences. This finding is partly in agreement with those of studies [38, 39] which reported that women with lower ideal desired number of children were reported to have high intention to use long-acting reversible and permanent contraceptive methods. The finding also partially corresponds with the assertion that contraceptive use among Ugandan women is hampered in part by patriarchal family units that place a high value on children and encourage large family sizes because having a large family is regarded as a sign of wealth and financial security in some communities [40].

Formerly married women were less likely than their never-married counterparts to have the intention to use contraceptives in the future. This might be linked to the perceived limited exposure to the risk of pregnancy among these women as they are no longer staying with regular sexual partners. The formerly married women may see limited need to use contraceptives, especially when they have no intention to remarry or enter new sexual unions. This finding is consistent with those of a study conducted in Ghana on the determinants of

Table 3 Regression of factors associated with intention to use contraceptives in the future

Variable	OR (adjusted)	*P*-value	95% CI
Age (years)			
15–24*	1.000		
25–34	0.546	0.059	0.042–0.771
35–44	0.242	**0.000**	0.143–0.284
45–49	0.028	**0.000**	0.017–0.044
Education level			
No education*	1.000		
Primary	1.110	0.301	0.910–1.354
Secondary+	1.482	**0.001**	1.168–1.880
Religion			
Anglican*	1.000		
Catholic	0.896	0.097	0.786–1.020
Muslim	0.676	**0.000**	0.559–0.817
Pentecostal	0.708	**0.000**	0.598–0.837
Other	0.701	0.158	0.427–1.149
Region			
Central*	1.000		
East	1.233	0.843	0.749–1.432
North	1.261	0.138	0.973–1.789
West	0.991	0.788	0.695–1.318
Family size preference			
0–2 Children*	1.000		
3–4 Children	1.343	**0.001**	1.135–1.590
5 + children	0.917	0.357	0.763–1.103
Marital status			
Never married*	1.000		
Currently married	1.083	0.487	0.865–1.354
Formerly married	0.672	**0.003**	0.517–0.875
Number of children ever born			
Never given birth*	1.000		
1–2 Children	1.157	0.166	0.941–1.424
3–4 Children	1.817	**0.000**	1.391–2.373
5 + children	1.560	0.089	1.291–2.173
Pregnancy wantedness			
Last pregnancy wanted*	1.000		
Unwanted	1.720	**0.021**	1.231–2.405
Pregnancy termination			
Never had a terminated pregnancy*	1.000		
Ever had a terminated pregnancy	1.148	0.125	0.962–1.369
Knowledge about family planning			
No knowledge*	1.000		
Has knowledge	2.457	**0.000**	1.686–3.579

Bold indicate significant values at α=0.05 ($p<0.05$) *indicates the reference category

contraceptive non-intention, which revealed that unmarried women were positively associated with contraceptive non-intention [31]. The results also align with those of a study on modern contraceptive use among Ugandan women, which discovered that married and cohabiting women were less likely to use modern contraceptives than their counterparts who were single or not in union [41].

The findings also reveal that women who reported having ever given birth to at least 3 children were 1.8 times more likely to have the intention to use contraceptives in the future than their counterparts who had never given birth. The number of children a woman has ever given birth to increases her intention to use family planning. This is not so surprising because women need to limit the number of children after achieving their fertility goals. This finding partially supports a study conducted in some SSA countries with high fertility rates, which found that women with more children were more likely to intend to use contraception than women who had never given birth [12]. The findings are also consistent with those of an Ethiopian study, which found that women with a higher number of children were more likely to use contraception methods [7].

Women who reported knowing any family planning method were 2.5 times more likely to say they intended to use contraceptives in the future than those who did not. This could be because the women know the benefits associated with family planning and may also be aware of the existing side effects and misconceptions that deter the use of family planning. Our finding is partly consistent with the findings of previous studies in Ethiopia [9, 32, 38] which revealed that women who had good knowledge of contraceptives were more likely to intend to use modern contraceptives than women with poor or no knowledge of contraceptives. Increased knowledge and awareness about family planning is critical for any country's success in promoting greater awareness and knowledge of family planning procedures and options [42, 43].

This study relied on nationally representative data from Uganda's major regions. The data is trustworthy because it was gathered by a reputable national organization that conducts large surveys and censuses. However, the study, like other cross-sectional studies, cannot draw a causal inference about future intentions to use contraceptives since it measured associations. The study examined the determinants of intention to use contraceptives among current non-users of reproductive age. It was limited to assessing associations and not causation. There is a need to carry out a qualitative study to understand the attitudes and perceptions of women who have varying intentions regarding contraceptive use to provide a deeper understanding of women's intentions to use contraception.

Conclusions

The study findings indicate that more than half (60.2%) of current non-users of contraceptives had an intention to use contraceptives in the future. The intention to use contraceptives in future among current non-users of

contraceptives was associated with women's age, education level attained, religion, family size preference, marital status, and number of children ever born. The study emphasizes the importance of family size preferences, as well as fertility behaviours, on future demand for family planning, which is essential for the sustainable realization of Uganda's demographic dividend. The study recommends that Uganda's policymakers and Programme implementers should work towards formulating policies and implementing programs aimed at increasing the use of contraceptives. Government efforts to increase secondary school enrollment by both boys and girls should be enhanced. More focus on girl child retention in secondary school should be prioritized. Enhanced but also incorporating comprehensive sexual and reproductive health education in the curriculum. The study further recommends that policymakers and program implementers sensitize communities about the benefits of smaller family sizes through community dialogues highlighting the health, economic, and educational advantages for families and communities.

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Author contributions
GT and RN conceived and designed the study, analyzed the data, interpreted the results, and drafted the manuscript. PN and BT guided the development of the conceptualization, data analysis, and final manuscript. All the authors read, edited and approved the final manuscript.

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Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
This study used secondary data; thus, ethical approval was unnecessary. We sought permission to access and use the dataset from the MEASURE DHS Program.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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